IRELAND
IN PRE-CELTIC
TIMES

BY

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INTRODUCTION

The present volume contains the substance of a course of public lectures delivered at University College, Dublin, during the session 1915-6. They have been to some extent re-written and re-arranged for publication in permanent form, and expanded, but not much beyond their original scope : the purpose being rather to give the reader a general view of the course of civilisation in Ireland than to bewilder him with a multitude of details. It is hardly necessary to say that no exhaustive treatment of the subject, or of any part of it, could be presented within the limits of a course of lectures ; still, it is hoped that the book will be of service as an introduction to the study of the antiquities of what is archaeologically one of the most important countries in the world.

There have been previous attempts at compiling a synthetic account of Irish antiquities. We have the works of O'Curry,[1] Col. Wood-Martin,[2] and Dr. Joyce.[3] Some apology is therefore needed for presenting another essay on the same subject. The main fault which may be found with the books mentioned—this is stated without any intention of detracting from the merits which they possess—is the neglect of the important subject of chronology. Thus, we read that " the ancient Irish " did this or that, but we do not learn whether they were the people of the Age of Stone or of the Age of Iron—a question surely not wholly

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[1] *Manuscript Materials of Ancient Irish History*, Dublin, 1861, reprinted 1873 : *Manners and Customs of the Ancient Irish*, London, 1873.

[2] *Pagan Ireland, an archaeological sketch*, London, 1895 : *Traces of the elder Faiths of Ireland*, London, 1902.

[3] *A Social History of Ancient Ireland*, London, 1903

negligible.   Or we have chapters on " stone objects," " gold ornaments," and the like, without any very definite information as to their relative antiquity. Again, we do not learn whether " the ancient Irish " were unique in the manners, customs, and civilisation described, or whether similar manners, customs, and objects are found among other ancient races or tribes. In other words, the books to which I have referred fail to set the antiquities of Ireland in the light that can be shed upon them by comparison with those of other countries and other peoples.

In this work I have endeavoured to remedy these defects, so far as I have found it possible to do so. The whole scheme of the lectures was based on chronology.   As for the use of the " comparative method," it is not implied that on every occasion when an object is described some foreign object of the same kind is set beside it.   The point is that, throughout, Ireland is considered, not as a solitary island, but as an intrinsic part of Europe ; and its civilisation is treated, not as an independent phenomenon, but as a part of a much greater whole.[1]

Some will doubtless fall foul of me for my treatment of the place-names, which I have so far as possible endeavoured to print in their proper Celtic forms, in the hope of exposing a grave injury to historical and topographical science.

The phonetics of Irish and English are wholly incompatible.   Sounds exist in the one language that do not exist in the other.   Irish orthography has evolved a most ingenious method of representing, with complete accuracy, by means of the fewest

[1] The reader is strongly recommended to study Anderson's *Scotland in Pagan Times*, series ii (Bronze and Stone Ages), simultaneously with the present volume.   He will find there a wealth of material for suggestive comparison.   Ireland and Scotland form one archaeological province.

possible characters, the complex system of sounds in the Irish language : and as the general principles of the system of spelling can be learned by any intelligent person in about half an hour, there is no excuse for the mental inertia that refuses to acquire it. It follows that to represent the names of places " phonetically," *i.e.*, according to English ideas of orthography, is an impossibility. They are, as a matter of fact, spelt phonetically in their native dress : the so-called " phonetic " spelling of the maps does not represent the proper pronunciation at all, on any scheme of interpretation of the characters.

In the *Times* Literary Supplement, 27 April 1916, p. 201, Mr. Nevill Forbes, the eminent Russian scholar, writing on the transcription of Russian names, makes the following remarks, which *mutatis mutandis* apply equally well to Irish names. Having spoken of the Russian practice of writing foreign words according to the principles of Russian spelling, he . says :

" The question then arises whether we can in our turn transcribe Russian names phonetically in English, and the answer is undoubtedly and emphatically *no*. It may be urged against this that if in other countries it can be done, it can be done here ; and if in Russia English names can be spelt phonetically, as they are, there is no reason why we should not retaliate. But the cases are on totally different footings. The phonetics of English are so rich, and English orthography is so anomalous, that phonetic spelling of Russian names would lead (as attempts at it have already done) to endless confusion, inaccuracy, and misinterpretation. Both in French and in German there is less variety of vowel-sounds than in English, and therefore less difficulty in the use of particular conventional symbols to represent foreign sounds. For instance in French, *ou* has only one value, and the sound it represents is never rendered in any other way in French except by *ou ;* therefore it is the only possible way of rendering the Russian *u*-vowel. . . . But in English this same *u*-vowel is habitually rendered in a variety of ways, and again, each of the symbols by which this sound is represented has other values, so that endless difficulties immediately arise."

A few examples of the current perversions of Irish place-names will illustrate these sensible words, and

will serve as additional arguments for the course here adopted. The least objection to them is their unearthly hideousness, as exemplified by monstrosities like Coogaquid, Mulnasheefrog, and Buffanoky. None of these spellings is more than a rough approximation to the proper pronunciation of the name ; the delicate play of palatalized and unpalatalized (" slender " and " broad ") consonants is wholly lost, though it would be clear to anyone who had been through an elementary Irish grammar, and who saw the words in their proper forms— *cúigeadh cuid* (" fifth part "), *mullach na siodhbhrugh* ("summit of the fairy palaces"), and *both feannóige* (" hut of a scald-crow "). Sometimes the ear of the surveyor has led him yet farther astray, as when he writes the absurd word " Carrawaystick," to represent *ceathramhadh istigh* (" inner quarter "). It is quite impossible to write these words according to English phonetics without the use of elaborate diacritic signs.[1] Why, then, try to do so, thus making a place ridiculous by calling it by a ridiculous name ? *Ceall* (" church ") and *coill* (" wood "), both very common initial elements in Irish place-names, and sounding totally distinct from one another, are lumped together inextricably under the single form *kill*, which does not represent accurately the pronunciation of either of them. *Baile* (" a town " or " a steading ") becomes the ugly " Bally " : this, again, bears only a remote resemblance to the real sound. *Cnoc* (" a hill ") becomes needlessly lengthened into " knock " ; and this, by

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[1] The nearest I can get to represent the pronunciation of this name, in " English " letters and without diacritics, is *cyahroo ishtyee :* but the *h* is unlike the English *h*, the long *u*-vowel (*oo*) is nasalised (as shown by the *mh* in the Irish spelling ; this cannot be expressed in English spelling), and is followed by a slight *w*-like sound (indicated by the *adh*) which does not exist in English, and is probably beyond the reach of most English throats. [The current lazy and ugly trick of spelling verbal nouns without their final letters (as *ceartú* for *ceartughadh*, or *scrí* for *scriobhadh*) tends to pervert the phonetics of the language by leaving this very characteristic sound unexpressed].

analogy with the English word of the same spelling, loses the essential *k* sound with which it should begin, and is pronounced *nok*. *Cnoc buidhe* ("the yellow hill") should be pronounced something like *k'nuk bwee*. The surveyor took this down as "Knockbue"; and now, if you want to go there, I understand that you have to ask for "Nokbyoo." *Coillte amach*, "the outer woods," pronounced something like *kweeltye 'moch*, with stress on the *'moch*, is now spelt Kiltimagh: and accordingly is pronounced "Kiltĭma," with stress on the first syllable.

There is no system followed in these perversions. *Mullach garbh*, "the rough summit," should not be written any other way, and when you have taken the trifling trouble of finding out what meaning is attached to the various symbols, you know exactly how to pronounce it. But this name appears at random as Mullygarry, Mullaghgarve, Mullagarry, Mullaghgarrow; and not one of these forms accurately represents the proper pronunciation. In other names the word *mullach* appears as Mul, Mulla, Mully, Mullagh, Molly, Molough, perfectly arbitrarily: never by any chance in the only correct form, which alone expresses the pronunciation. This is only one illustration of many such words that are tortured at random into every possible form but the right one; the amount of unnecessary trouble thus involved in looking up indexes can easily be imagined. It is not merely that different places which happen to have the same Irish name are spelt differently for distinctive purposes; there would be a certain amount of sense in doing so. But one and the same place is presented under a variety of guises, all of them wrong.

Some of the corruptions are even worse, being absolutely different from the real place-names. On Inis Oirthear Arann [1] is an inlet of the sea called

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[1] A name spelt *Inisheer* on the maps, though it is always pronounced *Iniseer*.

liag bhuidhe (" yellow flag-stone "). The surveyor presumably noted this " Legewee " ; but the map-drawer mistook the capital L in the field-book for an S, and so this name appears on the maps as " Segewee." On the great island of the same group is a village called *gort na gcapall*, which gives no difficulty in pronunciation when you understand the meaning of the symbol *gc*. The map calls it " Ourtnagopple." [1] At the west end of the same island are two islets of rock, one called *oileán an dá bhránóg* (" the island of the two ravens "), and the other *an t-oileán aedhearach* (" the airy island "). The latter is marked " Rock Island " on the map. The other island (which is the larger of the two) has no special name given to it ; but its native name was understood to mean " island of two ' brannocks,' " and to refer to both islands ; so that the little group appears as " The Brannock Islands " on the map. These names are unknown to the natives of the region around.

The objection that some people may make, that the Irish names are inconveniently long, is easily met. For in the maps of the Scottish Highlands most of the Gaelic names are accurately rendered, and no inconvenience is caused. The Irish maps are, from a surveyor's point of view, so marvellously accurate that it is surely a pity that they should be so slipshod in this important matter.

Accordingly I have adopted the native spellings, so far as they can be recovered—for it is to be feared that many are corrupted beyond salvation—in the present work. In such a reform there is no half-way house, and the practice once begun must be carried out consistently. I have, therefore, used anglicised forms only in speaking of towns of over

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[1] These examples have already exposed sufficiently the custom of running two or more words into one Gargantuan compound. An extreme case is "Coosfaddamoreennabinnia" on one of the Kerry maps—a compound of six words.

1,000 inhabitants *as modern places* (*e.g.*, when speaking of museums in Belfast or Dublin) ; and in quotations. But when speaking of them as ancient sites I use the native spelling (as in referring to the gravels of Latharna, not Larne). Names of English origin (as Whitepark Bay) are, of course, used in their English form, not translated ; and Scandinavian names like Wexford (which are few in number, and can take care of themselves) are used in their modern forms. Another important exception is the county names, *which should always be given in their English forms.* For counties are an English innovation, and their names, being usually derived from the anglicised form of the chief town, have no meaning in Irish.

It may be said that logically I should carry the process further ; that English names should be given in their Saxon equivalents ; that if, for example, I had any occasion to refer to Glastonbury, I ought to write *glæst-inga-byrig.* This, of course, is not analogous at all. I have not used ancient or mediaeval Irish names, but the modern forms, in modern spelling. What the current map names are, may be understood by imagining that the Spanish Armada had conquered England ; the Spanish rulers might *spell* Hampshire " Xamchuy," and Howth " Jóce," and the English subjects, thus misled, *call* them " Zamtshoo " and " Joass " !

Those who prefer them, will find the perverted form of names mentioned in this book recorded in the index.

A second series of lectures, delivered in the Academic year 1916-7, which carries the archaeological history of the country through the Celtic period, will follow : and I hope to complete the work with a volume containing a classified bibliography of books and papers on Irish Archaeology. This compilation will shew the reader where to look,

should he desire to extend his reading, in any of the branches of the subject, further than they can be treated within the limitations of a single volume. As this bibliography is in contemplation, the references to authorities given in the footnotes in the present volume are perhaps fewer than they would otherwise be.

The following abbreviations should be noticed :—

JRSAI=Journal of the Royal Society of Antiquaries of Ireland. [This society had different names at different stages of its history, but this abbreviation is employed for the whole series of its publications.]

PRIA=Proceedings of the Royal Irish Academy.

TRIA=Transactions of the Royal Irish Academy.

JAI=Journal of the Anthropological Institute.

UJA=Ulster Journal of Archaeology (first and second series distinguished by I, II).

BNFC=Belfast Naturalist Field Club.

Other periodicals are quoted with sufficient fulness to be easily recognisable.

I must not close without expressing my sincere thanks to the Rev. Editors of the *Irish Monthly* for offering the hospitality of their pages to these lectures, and for the practical interest they have shewn in their serial publication. It should perhaps be mentioned that the volume before the reader is not a mere reprint from the *Irish Monthly*. Illustrations have been added and the text revised and enlarged throughout. I must also thank the Councils of the Royal Irish Academy and of the Royal Society of Antiquaries of Ireland, for allowing me the use of numerous illustrations : also Messrs. Longmans for fig. (70) from Sir J. Evans' *Bronze Implements of Great Britain*.

R. A. S. M.

CHAPTER I

A SKETCH OF THE HISTORY OF IRISH ARCHAEOLOGY

I. Archaeology in early Irish Literature. II. " Book Antiquaries "
and " Field Antiquaries." III. Sir James Ware. IV. Edward
Lhuyd. V. Sir Thomas Molyneux. VI. Charles Vallancey.
VII. Edward Ledwich. VIII. Sir William Betham. IX.
George Petrie. X. The Ordnance Survey. XI. John
O'Donovan. XII. Eugene O'Curry. XIII. The Royal Irish
Academy Museum. XIV. Sir William Wilde. XV. Other
Workers. XVI. The Importance of Irish Antiquities.

I. An interest in the past is a natural instinct of
humanity. There is no tribe, however low in the
social scale, that has not asked questions about how
the world has come to be, with the living things that
people it ;· and that has not found answers which,
if artless and unscientific, at least satisfy the craving
for knowledge. Of this natural interest in the past,
Ireland affords a conspicuous example. The two
professions, the bardic and the druidic, were endowed
with many privileges, in virtue of their members
being the repositories of the popular traditions—in
the one case on the historical side, in the other on the
religious.

But, although the early Irish writers thus display
a deep interest in History, the conception of a science
of Archaeology does not seem to have entered their
heads. The ancient monuments of Ireland, which
are still conspicuous, must in the nature of things
have been yet more conspicuous in the middle ages ;
but we find few definite references to them in mediae-
val Irish literature.[1] Not till the seventeenth century

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[1] This is not meant to imply that the Irish literature is not of
any service to the archaeologist : quite the contrary—a study of
Irish literature is absolutely essential for a proper comprehension

did people begin to open their eyes to the interest of the actual remains of antiquity in the country.

II. We may divide those who have concerned themselves with the study of the past of Ireland into two classes, which we may call " book antiquaries " and " field antiquaries " ; though this is not to be taken as a hard-and-fast division, nor is it intended to claim a superiority for either class over the other. The book antiquaries are those whose special work lies among manuscripts—Colgan, the Four Masters, Keating, Dubhaltach mac Fir Bisigh, Rudhraighe ó Flaithbheartaigh, and the rest of the succession, down to the eminent scholars of our own day. The field antiquaries are those who study the tangible remains of antiquity, be these the monuments scattered through the country, or small objects in collections. It is with the work of the latter that we shall be chiefly concerned in the following pages ; but we cannot afford wholly to neglect the province of the former. Without a critical knowledge of the native records the field worker is at sea, as may too often be illustrated from the pages of our antiquarian journals. Without a knowledge of antiquities, and, above all, a comparative knowledge of the antiquities of other countries, the book antiquary becomes an unscientific enthusiast of the O'Curry type.

III. Among the students of the tangible remains of antiquity in Ireland, the first name that meets us is that of Sir *James Ware*. He was the son of the secretary to Sir W. Fitzwilliam, the Lord Deputy, born in Dublin in 1594. At Trinity College he made

of Irish antiquities, and *vice versa*. The two complement and illumine each other at every step. But the references in Irish literature throw light on antiquities rather by incidental mention or allusion than by direct description. Thus, we have speculations on Ogham writing, without a single reference to any existing Ogham monument, which might have corroborated or refuted those speculations. But, on the other hand, we have many indirect allusions to Ogham writing which properly interpreted, are of the greatest value.

the acquaintance of Archbishop Ussher, who encouraged his archaeological tastes ; he likewise met Dubhaltach mac Fir Bisigh, who taught him a certain amount of Irish, though it does not appear that he ever acquired enough to make him independent of native scholars. He amassed a fine collection of Irish Manuscripts, part of which is now in the British Museum, and part in the Bodleian Library. His works include—Inquiries into the Antiquities of Ireland ; Annals of Ireland from the first Conquest of the English : Commentaries on the Prelates of Ireland, from the first Planting of Christianity to the year 1665 : and a list of the Writers of Ireland, from the fifth to the sixteenth century. These works, though brief, testify to no small amount of painstaking research, when the absence of all library facilities is taken into account.

IV. The next important name is that of *Edward Lhuyd*, born 1660, keeper of the Ashmolean Museum at Oxford ; who, in 1698, set out on an extended journey through Wales, Scotland, Ireland, Cornwall, and Brittany, studying the Celtic languages : of which he published grammars and vocabularies under the title *Archaeologia Britannica*, vol. I (1707). The second volume, which would have contained the archaeological observations he is known to have made, was never published ; this is the more unfortunate, as his manuscript collections were destroyed in a fire at a bookbinder's office early in the nineteenth century. Only a few letters are preserved, which show his power of making careful and accurate observations.

V. *Sir Thomas Molyneux* was a practising physician in Dublin, interested in Natural Science. In 1725 he made his one contribution to archaeology, in the shape of *A Discourse concerning the Danish Mounts, Forts, and Towers in Ireland*, published as the third part of Boate's *Natural History of Ireland*. This seems to be the first contribution to the " Round Tower controversy " : it contains observations on

the Ring-forts, and an important plan of New Grange.

VI. *Charles Vallancey* was born at Windsor in 1721. In time he entered the Royal Engineers, and in 1762 he became Engineer-in-Ordinary in Ireland ; Lieutenant-General in 1798, and General in 1803. His duties on the military survey of Ireland brought him into contact with Irish antiquities. In these he developed a keen interest ; but his total lack of critical judgment, and the fatal gaps in his wide but superficial knowledge, vitiated everything that he wrote about his favourite subject. In 1770 he began to issue his *Collectanea de rebus hibernicis*, which ran till 1804, the series compising six volumes. It is a series of essays, by Vallancey and others : the fruit of the labours of a committee, of which Vallancey was a leading spirit, established within the Royal Dublin Society for the purpose of investigating Irish antiquities. He also published other works, such as *An Essay on the Celtic Language*, and an *Ancient History of Ireland proved from the Sanskrit Books*.

It is easy to laugh at these productions, which in the light of modern knowledge are truly absurd. A smile comes unbidden when we read the solemn pretentiousness with which Irish words are compared to those in Hebrew, Chinese, Japanese, Kalmuck, and other remote languages, or the assertions made with ponderous but unauthoritative dogmatism about Phoenicians, " Magogians ", Round Towers, Druids, and all the rest of the shibboleths. But it is unfair to ridicule men for not possessing knowledge which in their time was inaccessible. They lived before the decipherment of the Egyptian and Cuneiform inscriptions had revolutionised our conceptions of Oriental history ; before the teachings of Geology, of Anthropology in all its branches, of Philology, had been scientifically formulated—even the history of Gothic Architecture was unknown when they lived, so that with the best intentions it would have been impossible for Vallancey and his friends to perform

even a task so comparatively simple as the description of a mediaeval village church. When we remember the difficulties of travel, and the disturbed state of the country, to say nothing of the non-existence of such aids as trustworthy maps and the art of photography, which are freely at our disposal, we are bound to admit that in the mere amassing of materials the authors of the *Collectanea* set an example of industry that must go far to excuse them, if in their unavoidable ignorance of present-day knowledge they often went astray. Their absurd notions about the Round Towers, for example, should not blind us to the significant fact that at a time when there were no guide books or other books of reference, no maps, no penny postage, no railways, no motor-cars, no photography, none of the things which we have come to consider essentials of research, these earnest students had already explored the country sufficiently to enable them to draw up an almost complete list of those structures. With a little infusion of their spirit we should by now have completed that crying *desideratum*, a complete archaeological survey of the country.

Indeed there is even yet a sad lack of a scientific spirit in the study of antiquities in Ireland ; " Vallanceyism " still preserves a certain vitality ; there seems to be a notion current that anyone is entitled to " fool " with antiquities in his spare time—if we may be permitted the expressive colloquialism—and thereby to acquire the right to call himself an " archaeologist " ! The publications of our antiquarian journals, even yet, occasionally contain stuff as bad as anything to be found in the *Collectanea*. Here is an example, selected at random, of the sort of thing that sometimes passes for archaeology : it was written not thirty years ago, by one who had a considerable reputation as a collector of Irish antiquities.[1] Nearly every possible mistake is made in these few words :

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[1] I suppress names and references.

nearly every point of importance is missed : and the extract ends with a pointless outburst of " highfaluting " which is merely irritating :

" The battle-axe [*sic* ; the object under description is a halberd], though with little beauty to recommend it [what has this to do with its scientific interest ?][1] is yet the most interesting of all the weapons found at . . . It is apparently of pure copper [apparently ! Why did the author not get it analysed, and settle this *vital* question definitely ?] and, like those of the Firbolgs [*sic*] is round pointed [whence comes this knowledge of what sort the weapons of the Fir Bolg were ?] and of ruder construction than the sharp-pointed weapons of the Tuatha de Danaans [*sic*]. It was attached to the handle by massive rivets of the same material as itself ; of these it originally had three, but only one is *in situ*. With its heavy curved blade flattened to its edges [a not very intelligible description] it is a formidable and destructive weapon, and takes us back to an age long before the advent of Our Saviour, when the valleys and hills of Sligo echoed back the war-cries of the opposing armies who strove in deadly combat upon the historic plains of Moytura."

So long as the publication of fantastic effusions like this is permitted, just so long are we bound to withhold our mockery over the ashes of Charles Vallancey.

VII. The Rev. *Edward Ledwich* may be called the first of the iconoclastic school of Irish antiquaries. To explain this term it may be said that there are two kinds of meddlers in Irish archaeology, and it is hard to tell which of them is the more mischievous. The first kind (who are ardent members of one political party) are full of the glories of Brian the Brave, and of that dreamland time when Ireland, as one of their own poets has said, was peopled by a race " taller than Roman spears "—a condition of things that could not be brought about, save by an epidemic of acromegaly or some similar disease ! The other kind (who are rampant members of the

[1] Students of archaeology should mark and learn this sentence of the illustrious Déchelette—" L'intérêt scientifique des trouvailles archéologiques ne se mesure pas aux dimensions des objets, non plus qu'à leur caractère artistique." *Manuel d' archéologie*, II, 1293.

opposite political party) are for ever chortling over the savagery of the country down to the time of Queen Elizabeth, the evidence for human sacrifices, people going about without any clothes on, and so forth.   As is usually the case, there is an element of truth in both ways of interpreting the evidence ; but the exaggerations on both sides are so great that the truth is completely hidden.   On the one hand, to resent all suggestions that Ireland, like every other country, rose to civilisation from a savagery comparable with the most primitive to be seen in Africa or in the South Sea Islands, is simply an indication of childishness or of ignorance.   On the other hand, every attempt to deny or to belittle the great part which Ireland played in religion, literature, and art during the last decades of paganism and the first centuries of Christianity can spring from nothing less discreditable than prejudice or downright dishonesty.

Of the second class of critics, Edward Ledwich was the pioneer.   He was born in Dublin in 1738. A bigoted Protestant, he evidently felt it his religious duty to " barbarize " the past of Ireland as much as he possibly could.   His thesis was, that everything in the country which indicated the least approach to civilisation was the work of the Danes, who with him became as great an obsession as did the Phoenicians with Vallancey.   It must in fairness be admitted that his *Antiquities of Ireland*, published in 1790, is not without its merits.   It was a corrective to Vallanceyite enthusiasms, and many of the author's remarks are shrewd, and shew him to have been possessed of some critical judgment.   The faults of the book, however, are more obvious than its virtues.   There is not a little disingenuousness in the way in which facts are twisted to suit his theories and prejudices : and the way in which he speaks of the religious faith of those who happen to differ from him, though doubtless in accordance with the intolerant spirit of his time, is wholly indefensible.

VIII. Sir *William Betham*, at the beginning of the nineteenth century, did valuable work in arranging and cataloguing the records in Ulster's Office.   Had he confined his attentions to the genealogical and heraldic subjects for which he was fitted he would have left behind a greater name than he has actually done.   Unfortunately he meddled with the Phoenicians and the Etruscans, and, like many a better man, shipwrecked himself upon the rocks of those perilous seas.   His *Etruria Celtica*, along with O'Brien's *Round Towers* and Keene's *Towers and Temples of Ancient Ireland*—books of which this bare mention will suffice—holds the foremost place among the irredeemably insane books on Irish antiquities.

But here again we must withhold our laughter. It is not so very long since people dug up one of the most important mounds of Teamhair in search of the Ark of the Covenant ; and since somebody or other wrote a book to prove that Ireland was " Ur of the Chaldees " !

IX. In the year 1789 was born *George Petrie*, the first personality of permanent importance in Irish archaeology.   In pursuing his vocation as a landscape painter, he soon became attracted to the interest of Irish antiquities, to the study of which he devoted a large part of his life.

Petrie was born just when scientific order was beginning to evolve, in several departments of learning, out of the undisciplined theorising of the eighteenth century ; and when the rapid progress of discovery was stimulating students to greater exertions.   His work, though not perhaps so perfect as his more enthusiastic eulogists suppose, shows clear evidence of the influence of the new spirit.   While not himself an Irish scholar, he had at his side the leading Irish scholar of his time, John O'Donovan.   Most of his work was done before the Famine had made so deplorable a break with the old traditions, and had swept away so much of the language and the music and the memories of the old days.

Of Petrie's archaeological essays, the first is his *History and Antiquities of Tara Hill* : a very thorough account of the site and of the literary evidence that can be called upon to illuminate its problems. His second work, the *Ecclesiastical Architecture of Ireland*, published in 1845, is better known. In this treatise he disposed finally and for ever of the clouds of guess-work that had accumulated about the Round Towers. A collection of *Christian Inscriptions in the Irish Language* was published after his death, but scarcely enhances his reputation. An account of the *Military Architecture of Ireland* still remains in MS., in the custody of the Royal Irish Academy.

X. These essays are a fruit of the great *Ordnance Survey* scheme of Captain Larcom. This enlightened officer was appointed director of the Ordnance Survey in 1828. In the plan which he drew up for the work, it was proposed to accompany the maps of each county with a memoir, describing its natural resources and economical character, as well as its historical and antiquarian monuments. Petrie was appointed in 1833 to superintend the latter part of the undertaking ; and he, with a committee that he gathered round him, met daily in his Dublin house, No. 21 Great Charles Street. Their duty was to collect, from all available sources, details of the history of the ground being surveyed, while one of their number — usually O'Donovan — accompanied the surveyors, and wrote letters from the field, describing the antiquities, place-names, and local legends. But this magnificent enterprise was suddenly dropped, on the alleged ground of expense, after only one of the projected volumes had been issued. The whole story of the inception, progress, and stoppage of the scheme can be read in the extremely interesting fourth chapter of a very interesting book—William Stokes' *Life of George Petrie* (London, 1868). The writer concludes his well-documented history with the following noteworthy words :—" From a review of the official objections to the continuance of the

work, and from considering the tenor of some of the questions put by the Commissioners of Inquiry, . . . it seems as if some strong, though concealed, influence had been brought to bear on the Government in reference to the danger of re-opening questions of Irish local history. These one-sided views prevailed, and the great undertaking, so earnestly desired by all who wished for the future prosperity and happiness of the country, was finally given up."

It is only right to add the comment that the suspension of the work was in a sense a blessing in disguise. For in the thirties of the last century the times were not ripe for an archaeological survey of Ireland, or of any other country. The principles of archaeological observation have to be acquired, like any other science : and they had scarcely been formulated at the time in question. Perusal of the letters written, chiefly by John O'Donovan, to the Archaeological Committee of the survey, shews how imperfect the work would have been. Much is recorded which is of the greatest possible value : but one of the most surprising things about these letters is the enormous quantity of important material which is passed over in complete silence, and the helpless amateurishness of much of the descriptive matter. The publication of O'Donovan's Ordnance Survey letters has often been urged ; but to publish them without a complete re-collation of the letters with the remains actually to be seen in the fields would be a fatal error.

Now is the time for such a survey ; in fact, if it be delayed much longer it will be too late. Increased tillage, changing ideas, and many other causes are proving fatal to the ancient monuments of Ireland ; and if a record is to be kept of them for future generations of scholars it must be begun at once.

But history repeats itself. In 1908 Royal Commissions were appointed to draw up complete lists of the antiquities of England, Scotland, and Wales, surveying each county systematically one by one ; they have already issued sixteen splendid volumes.

The prayers of the Royal Society of Antiquaries of Ireland, and of the Royal Irish Academy, that a similar commission should be appointed for Ireland, were met with a direct refusal.

XI. *John O'Donovan* was born at Ait an Tighe Mhóir, Co. Kilkenny, in 1806 ; he was the fourth son of a farmer in the county.   At an early age he became a hedge school-master.   In 1826 he obtained a post in the Record Office, and in 1829 in the Ordnance Survey.   Thenceforward his life was devoted unwaveringly to the elucidation of Irish History, Topography, and Antiquities.   Most of the Ordnance Survey letters, mentioned above, which are now deposited in the Royal Irish Academy Library, are written in his own neat hand ; these fill thirty-eight quarto volumes, with about 600 pages in each volume ;   besides which there are fifty-two boxes of letters and documents of various kinds, a great collection of extracts from printed books and manu-scripts, and the field books, with the etymologies of the Irish names—the last-mentioned preserved in the Ordnance Survey Office.   In addition to these letters, he poured forth a constant stream of editions of important texts, illuminated with notes drawn from his unique knowledge of the country and of the literary sources.   In 1852 he received a commission to edit the Ancient Laws of Ireland—a work impossible to carry out adequately even yet, and doubly so in O'Donovan's time ;   a task that will never be within the capacity of one man to accomplish, such enormous knowledge does it require of philology, history, folk-lore, law, and the development of social institutions. O'Donovan died without seeing any of the fruit of his labours in these exacting texts.

XII. *Eugene Curry*—in later life he restored the patronymic prefix to his surname—was discovered by Mr. Smith, of the publishing house of Hodges and Smith, in the uncongenial office of warder in a lunatic asylum.   Brought up to Dublin, he had a career parallel with that of O'Donovan, who married his

(O'Curry's) sister.   In one respect he was more
fortunate than his colleague, for after many vicissi-
tudes he obtained the Professorship of Irish History
in the Catholic University of Ireland, so that his
labours secured him a regular income.   His lectures
in the chair were published under the titles *Manuscript
Materials of Ancient Irish History*, and *Manners and
Customs of the Ancient Irish*—the latter brought out
in two volumes after his death, with a preliminary
volume by the editor, Dr. W. K. Sullivan.   Though
antiquated by later discoveries, and by the scientific
development of the " comparative method," and
though vitiated by the author's engaging but un-
critical enthusiasms, these books, which form the
first serious attempt at a synthetic picture of ancient
Ireland, are still of considerable value, if used with
discretion.

XIII. This work of comparison between Irish
antiquities and the records in the manuscripts, a
work of which O'Curry was the pioneer, was made
possible by the collection of antiquities belonging
to the *Royal Irish Academy*, which is now deposited
in the Dublin National Museum.   The Royal Irish
Academy was founded towards the end of the eight-
eenth century for the study of Science, Polite Litera-
ture, and Antiquities ; and it issued the first volume
of its *Transactions* in 1787.   While the earlier volumes
of the publications of this venerable body are naturally
out of date, its records contain some of the most
valuable contributions to our subject that have been
made ; and its museum is the foundation-stone of
archaeological science in Ireland.   The nucleus of
this collection was formed in the earliest days of the
Academy, and was augmented by the gift of a series
of weapons and implements presented by Frederik
VII, the learned and enlightened king of Denmark.
These were arranged by Petrie when he joined the
Academy, and he persuaded the body to augment
its cabinet by the purchase of one or two private
collections.   He was enthusiastically seconded by

MacCullagh, the Professor of Natural Philosophy in Dublin University (1809-1847), who bought for the Academy the famous Cross of Cunga. Public subscriptions were opened and liberally responded to, at the end of the thirties, to secure the torques found at Teamhair, and later to purchase the shrine known as *Domhnach Airgid*. Petrie was himself an enthusiastic collector, and his own hoard of antiquities went to swell the Academy's museum after his death.

When we read of these and the like instances of public spirit, nearly a hundred years ago, we are tempted to say, " Were not the former times better than these ? " In these latter days, thanks to the selfish greed of collectors and dealers, valuable antiquities and manuscripts, which should be permanently housed in some public institution, are leaving the country, never to return.[1]

While we are on this subject, we must add that the official preservation of antiquities, as at present organised, can hardly be considered ideal. It consists of (*a*) the scheduling of certain monuments of outstanding importance for protection, and (*b*) the administration of the law of treasure-trove. The first is well and good so far as it goes : but it protects only those structures which by their very conspicuousness have been most frequently described and illustrated, and the loss of which, though deplorable enough, would not be the scientific calamity

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[1] On the very day when this page is receiving its final revision, there comes the news that the hereditary keeper of a most important ecclesiastical relic, one that by its very nature should be a national possession, has sold it in London for a large sum : we refer to the *Clogán Oir* the Bell of St. Senan. By great good fortune Mr. G. W. Panter, of Foxrock, Co. Dublin, has come forward to shew that the tradition of public spirit is not wholly dead : for he has bought the shrine to present it to the Royal Irish Academy's collection. The magnitude of this service, however, does not make the incident any less instructive or any less disquieting. A public benefactor has bought the shrine, because its custodian would have sold it out of the country.

that the destruction of an unrecorded monument always is ; and it neglects the smaller and less out-standing remains, which by their " ordinariness " are in reality the more important, in that they are monuments of the *normal* life of the periods to which they belong.   The law of treasure-trove is entirely misunderstood in the country.   It is based on the old mediaeval idea that unclaimed property belonged to the Crown : and there is a notion current that the Crown confiscates the treasure without recompense. This, of course, is not the case.   Objects of antiquity acquired under the law of treasure-trove pass into the custody of the Royal Irish Academy, and they are thus preserved for the nation.   That body administers an annual grant, expressely allotted for the purpose of adequately remunerating the finders. The story that the objects are confiscated by the Government or by its representatives is spread artifi-cially by dealers and other sharks, whose purpose is to secure the objects for themselves, that they may pocket a profit upon them.   The finder is thus defrauded, and is put in the position of an offender against the law ; the country is defrauded, for it is more than probable that the dealer who thus acquires antiquities will sell them abroad, or may even melt them down : and science is defrauded, for as everyone concerned in the transaction keeps his mouth shut, the history and the circumstances of the find, which constitute half its scientific value, are irrecoverable.

But what is really wanted is a specially appointed Bureau of History and Archaeology, constituted to deal with the whole subject, and with funds sufficient to enable it to do so.   In a country of the enormous archaeological importance of Ireland, a civilised government would have established such an office long ago.

XIV. The Museum of the Royal Irish Academy was made available for general study by Sir *William Wilde*, who in the fifties of the nineteenth century devoted the leisure of his busy professional life to

arranging it and preparing the published catalogue, the first part of which appeared in 1857. Though in many respects antiquated, " Wilde's Catalogue " is still a standard work on Irish archaeology. It is far more than a mere list of objects, for it includes illustrated dissertations on all types of antiquities represented in the museum.

XV. Space would fail to tell at length of the work of Bishop *Graves* (1812–1899), and of Sir *Samuel Ferguson* (1810–1886), who devoted most of the time which they spent on archaeology to the decipherment of Ogham writing ; of Bishop *Reeves* (1815–1892), the erudite ecclesiastical antiquary ; of *J. H. Todd* (1805–1869), founder of the Irish Archaeological Society, which helped and supported O'Donovan ; of Lord *Dunraven, Margaret Stokes, Crofton Croker, Kennedy, Du Noyer, Wakeman, Borlase, Joyce, Coffey,* to name but a few of the most prominent of those who now rest from their labours.

And we must not forget that Dublin has not a monopoly of archaeologists. · A coterie in Cork deserves mention. Its leading spirit was *John Windele* (1801–1865), whose MS. collections, now housed in the Royal Irish Academy Library, are of great topographical value, and whose hoard of Ogham stones is in the Royal Irish Academy Museum. Kilkenny too, has had its eager antiquaries, chief among whom was the Rev. *James Graves* (1815–1886), who founded the Kilkenny Archaeological Society (now the Royal Society of Antiquaries of Ireland).

Ulster, also, has its archaeological " roll of honour." But only a few of the *soi-disant* students of the subject in the Northern Province have made contributions of value to the science. Most of those who have there paid attention to the subject have been nothing more than enthusiastic collectors. It will easily be understood that when a man devotes his leisure to amassing hundreds and thousands of flint arrowheads (let us say), and to doing the work of a museum clerk in sorting and labelling them, he cannot expect to have

much time left for serious study. Indeed the rank and file of collectors are an unmitigated curse to archaeology. They import an element of commercialism into the subject which is wholly to its detriment. Their interests are limited to making their cabinets fuller and richer than those of their rivals :[1] in the competition prices go up, and museums, which have no resources but inelastic grants of money, have to struggle against very unfair odds. And when death claims the collector, his cabinet is auctioned and dispersed to the four winds. Over and over again have I read in papers on Irish antiquities such words as these :—" I am happy to say this object is in my possession." But the writer is now dead, and where are his treasures ? A public museum is the *only* legitimate place for important antiquities : there is no harm in a student of the subject having a few type specimens by him, but to make antiquities merely the sport of a collector is to degrade them.

XVI. Ireland is unique among the countries of Western Europe, in that it never fell under Roman sway. In all the other lands the Romans came as a destroying deluge, instituting the *Pax Romana* at the cost of all the interesting strivings after civilisation that were budding forth when the Romans arrived to submerge them. In Ireland alone can certain phases of non-Romanised European culture be studied. Others may be studied in Scandinavia : the two countries supplement each other archaeologically, and Irish and Scandinavian antiquities, Irish and Icelandic literature, should be treated respectively as parallel studies. The preservation of Irish antiquities, therefore, becomes a duty which those responsible owe, not merely to the nation, but to the world of

[1] If anyone should read these strictures in a sceptical spirit, may I refer him to a paper by Mr. W. J. Knowles on *Ancient Irish Beads and Amulets* (JRSAI xv p. 522), and ask him to mark, learn, and digest the revelations there contained ?

learning at large.   And for two reasons the study of Irish archaeology should be on the ordinary curriculum of every school in the country, of every sort and denomination.   First, because it is by education alone that we can secure the continued preservation of the monuments.   Secondly, because there is no study more stimulating to the imagination, as anyone can find for himself who enjoys the pleasure of showing an intelligent child round a museum, and watching the rapid development of his or her eager interest in the antiquities there exhibited.

Yet the subject is, we might almost say, a thing tabooed.   It has to contend, on the one hand, with a dull and short-sighted utilitarianism ; on the other hand, with obscurantism born of political prejudices. Consequently, thousands of children grow up in the country who learn all sorts of things, but who have never heard of Dún Aonghusa, poised on the summit of its stupendous precipice : or of the lovely Chapel of Cormac at Caiseal Mumhan : or of Cluain maccu Nóis and its sacred associations.   Some time ago I showed to a child-friend a few photographs that I had taken on an archaeological tour.   She looked up from them, her eyes wide open with surprise, and said—surely a blasting impeachment of our whole scheme of education—" I never knew before that there was anything interesting in Ireland ! "

The disastrous consequences of this neglect are only too apparent.   Ancient traditional superstitions were once potent in preserving the ancient monuments. But those superstitions are dying fast ; and especially since 1903, when the people began to acquire the land, very serious damage has been done throughout the country to the antiquities.   No proper safeguards were introduced into the Land Acts—certainly none that cannot be easily circumvented—and unless something intervenes to stay the damage, the world will lose many of the lessons that Ireland, and Ireland alone, can teach.   The refusal of the Government

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to aid in the archaeological survey of the country makes the matter all the more serious.[1]

The signs of the times are not propitious.   Strife, international, political, social, is drowning the voices of peace ; and while madness is thus raging in the world, nothing can be done.   Dare we hope that a saner generation will follow ours, to *gather up the fragments which remain, that nothing be lost ?*

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[1] A visitor from Mars would naturally suppose that the empire which rules over the greatest and most varied assortment of native races has encouraged by special endowments the sciences of ethnology and anthropology in all their branches : without a thorough understanding of which it is impossible to rule native races aright.   He would probably make a good many mistakes in his progress through our Gilbert-and-Sullivan world, but that would be one of his worst.

CHAPTER II

AN OUTLINE OF THE ARCHAEOLOGICAL AND ETHNO-LOGICAL HISTORY OF IRELAND

I. The Development of Civilisation.   II. The Stone Age in Ireland. III. The Bronze Age in Ireland.   IV. The Iron Age in Ireland. V. The Romans and Ireland.   VI. The Introduction of Christianity.   VII. The Vikings. VIII. Romanesque Architecture.   IX. The Population of Ireland : the native Traditions. X. The Legend of Cesair.   XI. The early post-diluvian Occupations.   XII. The Tuatha Dé Danann.   XIII. The Children of Mil.   XIV. Criteria of Race.   XV. The Races of Europe. XVI. The Races of Ireland.   XVII. The Evidence of Excavation.   XVIII. The Evidence of modern Population.   XIX. The Evidence of ancient Literature.   XX. The native Tradition in the light of scientific Research.

I. It will be well to begin our study with a preliminary survey of the ground to be covered in the work before us.   Without such a preparation it might be difficult for one, approaching the subject for the first time, to see the wood for the multiplicity of trees calling for attention as we proceed.

Civilisation in Ireland developed along the same orderly lines of progress as have been proved, by the scientific researches of the past century, to have been followed over the greater part of the world.   In the beginning man sets forth on his long journey a savage, ignorant of the nature of the surroundings amid which he finds himself, and obliged to acquire even the most elementary knowledge by a long and painful process of experiments, trials, and errors.   He knows nothing of metals ; he must fight the wild and dangerous animals around him, or the beasts whose flesh supplies him with food, with rudely fashioned weapons of stone.   In time he discovers the properties of copper ; later he finds that he can harden this metal

by an admixture of tin, thus making bronze. Finally he learns the treatment and the uses of iron, and so he inaugurates the Iron Age, which is still in progress over most of the earth.

This succession of ages, the Ages of Stone, Copper, Bronze, and Iron, proved first for Denmark by the clear-sighted archaeologists of that country, has been shown to hold good for nearly all other countries, in both the Old World and the New, whose ancient remains have been studied. In a few places, owing to special circumstances (as when colonists bring into a stone-age island the sometimes doubtful blessings of European civilisation) there is a disturbance·of the regular sequence ; but, these chance accidents apart, the rule may be accepted as being practically of universal application.

It will not be amiss, however, to repeat the warning which has often been given against supposing that there is an *absolute* chronology implied in this division into Ages of the history of civilisation. It is not to be understood that at a certain moment of time, datable in centuries B.C., the world rolled out of the Stone Age and thenceforth enjoyed the advantages of Metal Age civilisation.[1] The sequence denotes a relative chronology, and indicates nothing more than that certain objects assignable to the Bronze Age, let us say, are older than certain other objects *from the same centre of civilisation*, and assignable to the Iron Age. The Bronze Age of any one country may have been contemporary with the Stone Age of another and with the Iron Age of a third. In other words, the absolute chronology of the sequence of ages, if it be determinable at all, must be determined for each centre of civilisation independently.

[1] In a sense this is true, inasmuch as there must have been a moment when, somewhere in the world, an object of metal was used for the first time. Before that moment the whole world was in the Stone Age, and, if we look at the history of humanity as an undivided whole, we can certainly say that after that moment the world was in the metal age.

Further research has enabled us to divide the *Ages* of civilisation into subordinate *Periods*. Each fresh discovery makes us realise more and more the enormous duration of time which elapsed between the first appearance of man on the earth and the first discovery of metals. In the course of the Stone Age, races of men, more diverse among themselves than are the most extreme types of humanity now living, developed, grew to maturity, and disappeared; arts rose, flourished, and died; and cultural development showed advances and retrogressions, whose stages it is necessary to classify and to label in order to understand their mutual relationship. The Stone Age is primarily divided into two periods, called respectively the *Palaeolithic* and the *Neolithic*, the "Old Stone Period" and the "New." In the first of these man was a hunter, and made his tools of chipped flint; in the second he was an agriculturist, and made some of his tools of polished stone. In recent years a preliminary period, the *Eolithic* or "Stone-dawn Period" has been prefixed by many "prehistorians" to the Palaeolithic. This has not commanded universal acceptance; the present is not, however, the place to enter into that hotly-disputed controversy. These periods are further subdivided into what we may term *stages* or *sub-periods*, which are named after places where representative remains have been discovered. Thus we have, among others, the Chellean, Mousterian, and Solutrean stages in the Palaeolithic Period; named respectively after Chelles-sur-Marne, Le Moustier, and Solutré. These are places in France where objects typical of the stages named after them have come to light.

The Bronze Age is also divided into periods, which may be conveniently denoted by numbers; five such periods are generally recognised in the archaeology of Northern Europe.

The Iron Age, properly speaking, extends down to our own time; and as it is improbable that anything will hereafter be found to take the place of iron, it

may be expected to endure to the end.   For conveni-
ence, however, the term is restricted in archaeological
discussion.   We may divide the Iron Age of Europe,
in the fullest sense of the term, into four periods.
The first of these is called by the name of the village
of Hallstatt, near Salzburg, close to which has been
found a great cemetery belonging to the beginning
of the Iron Age, and containing typical objects.   The
second, for a like reason, has been named after the
settlement of La Tène, on Lake Neuchâtel.   The
third period covers the time of Roman conquest and
domination over the greater part of Europe.   The
fourth is the period of the decline of the Roman power
and the rise of Christianity ; and this leads by imper-
ceptible stages to the mediaeval and modern develop-
ments of European civilisation.   In speaking of the
Iron Age of Europe, however, as a general rule it is
understood that the first two of these periods alone
are implied.

II. No certain traces of man older than the Neolithic
Period have been found in Ireland, so far as we can
say at present.   This country appears to have had no
share in the remarkable developments of the physical
constitution and of the material civilisation of the
human race, witnessed by the Palaeolithic period in
Central Europe.   It is not asserted that the discovery
of Palaeolithic remains in Ireland is an impossibility ;
but competent critics have preserved a sceptical
attitude with regard to all discoveries of Palaeolithic
remains in Ireland hitherto announced, and it is well
to follow their cautious example.

The beginning of the Neolithic Period, however,
finds man established on the sea-coast of the country,
living on molluscs, fish, and anything else that happens
to come in his way.   The forest-clad interior, infested
as it is by wolves and other noxious beasts, remains
at first uninhabitable, or at least uninhabited.
Gradually, however, man penetrates inland, following
the rivers that afford highways into the heart of the
country.   We can trace a continual advance in the

standard of living.   The tools, at first the rudest
chips, are improved ; the craftsman gains more and
more technical skill, till his handiwork becomes a
real art.   Wide acres of forest-land are cleared and
inhabited : society becomes organised, so that great
bodies of men can co-operate for a common purpose—
we can see the proof of this in the gigantic stone
monuments that they rear over their dead chieftains ;
and communication over sea is opened and maintained,
so that a way is made for the acquisition and adoption
of improvements in civilisation as they are introduced
elsewhere.

III. There is no reason to suppose that the Bronze
Age began any later in Ireland than in England.
Once it was introduced it ran a parallel course,
though with interesting local variations.   The key to
the understanding of the history of the Bronze Age
in Ireland lies in the fact that she was at the time a
rich gold-producing country.   Irish gold afforded
a commercial medium of exchange, which enabled
the natives to develop and push a trade with neighbour-
ing countries ; especially, no doubt, with the tin-
producing land of Cornwall, in order to procure an
essential material almost completely lacking in Ireland
itself.

IV. Save indirectly, the Hallstatt period of the
Iron Age was not represented in northern and western
Europe.   A few isolated Hallstatt objects have been
found in this country, but they are mere exotics, or
" wanderers "[1]—like   Oriental   " curiosities "   in   a

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[1] " Wanderers " are a curious phenomenon in archaeology.   I
have seen a Chinese knife which was dug up in a bog in Co. Done-
gal—probably dropped accidentally by some wayfarer.   Vallancey
(*Collectanea*, vol iv, p. 71) describes and figures a bronze vase
found about two feet under the soil at Fán, Inis Eoghain (Co.
Donegal).   This vessel came into my hands a short while ago,
and I had the pleasure of presenting it to the Royal Irish Academy.
It is Eastern Asiatic in origin : how Vallancey would have rejoiced
had he known this !   An Etruscan *harpago*, found in the bed of
a small stream at Saintfield, Co. Down, is now in the Royal Irish
Academy collection.

London drawingroom.   While the Hallstatt culture was dominant over eastern Europe, the north-west of the Continent was still in the later stages of the Bronze Age.   The La Tène culture is the first whose remains are actually indigenous to Ireland.   Though the number of the extant remains of the La Tène period is comparatively small, this period was of the greatest importance in the country.   With the knowledge of iron, and of the new developments of art imported from Gaul, there came a knowledge of the Roman alphabet ; and though vellum manuscripts were as yet unknown, a small literate class was developed, and these made shift to write down, on wooden tablets or on some such materials, the sagas and the legends till then transmitted orally by the people or by their bards.   It is to this period that we must assign the beginning of the written history, legal enactments, and rhapsodic poems that form the basis of extant Irish literature.

V. The Romans did not think Ireland worth conquering.   Its fate trembled in the balance, it is true, on one occasion, when a ruffianly Ulidian *regulus* came and besought the intervention of Agricola to settle some dispute that he had with his neighbours.[1] Fortunately Agricola had other things to do, and so Ireland was preserved for science as one of the few countries that remain to illustrate the development of civilisation without direct influence from the Roman Empire ; and thus to illuminate corners in European history that are not lighted from any other source. We have already seen that it is this fact which gives Irish archaeology a far more than merely national importance.

VI. The conversion of Ireland to Christianity must have been a gradual process, beginning at a very early date.   A strange legend tells us that the third-century king Cormac mac Airt had submitted to Christian teaching.   However that may be—and the

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[1] Tacitus, *Agricola*, cap. 24.

story is not altogether impossible—the art-motives that had become associated with the Christian religion, and with the instruments necessary for its rites, became engrafted on the dominant La Tène style. From this fusion sprang a marvellous decorative art, advancing by sure and steady steps till its culmination in the ninth and tenth centuries. This high development must have been the result of a not inconsiderable amount of peace and prosperity. Doubtless there were clan faction-fights now and then, in which a number of heads got broken ; and these are emphasised in the Annals with the same lack of a sense of proportion as we see in our modern newspapers, which fill columns with the details of a murder committed by some otherwise unimportant person, while they pass over with a brief paragraph the triumph-work of a master painter or musician. This defect must always be allowed for in reading the Annals. But the mere fact that fine works of art belonging to this period are in existence is in itself sufficient proof that there was a measure of quietness in the country, in spite of the stormy records of the official histories.

VII. Such a peace and prosperity could not fail to attract the attention of the Vikings. These greedy pirates established themselves on the shores of Ireland, sailed up her rivers, and plundered everything that they could lay their hands upon. But the Vikings were by no means mere pirates. They had their own arts ; they were, indeed, an almost inexplicable mixture of savagery and civilisation. Their settlements at Duibhlinn and elsewhere enabled them to impress their art-conventions on the native craftsmen ; and from the admixture of the two there sprang once more a hybrid style, which we may term Hiberno-Scandinavian.

VIII. In architecture, the Romanesque style began to creep into Ireland from the Continent, and during the eleventh and twelfth centuries it was dominant there as elsewhere in Northern Europe. Cormac's

Chapel at Caiseal Mumhan, the finest perfect specimen existing in the country, was built in 1127. The cathedral of Cluain Fearta Breanainn was built about 1166. Its wondrous doorway remains—the last supreme effort at self-expression of the native Irish art. Six years after this great work was accomplished the age-long traditions were laid low, as with a scythe ; cut off, abruptly and savagely, never to be recovered.

We are now to examine in detail, so far as our limitations of space permit, the relics on which are based the history summarily sketched in the preceding paragraphs.

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IX. Before proceeding to this task, however, we must consider an important question. Was this development of culture the result of successive migrations, each tribe as it arrived bringing into the country its own contribution to civilisation ; or was Ireland continuously peopled by one stock, who adopted, from their over-sea neighbours, the various discoveries and inventions whereby civilisation was from time to time advanced ?

To this question the native traditions return a very definite answer. They describe a long succession of immigrations, asserting categorically their connexion with the existing population of the country. It is, of course, obvious that the details of these invasions belong to the dreamland of folk-lore, and are not to be taken as literal history. They are affected by the imperfect geographical and scientific knowledge of their time. They have, moreover, been evidently worked up into their present form by Christian compilers, who fitted them, by the methods of Procrustes, into a scheme of chronology based on Biblical indications. In some cases, indeed, the statements of the native historians have proved to be mere adaptations of tales told, with entirely different associations, by Classical or by early Ecclesiastical writers.

But it is by no means to be inferred from this that

the testimony of the native traditions must be rejected as valueless. On the contrary, when rightly interpreted, they make a very real contribution to the problem before us. We therefore give here a short abstract of what they tell us ; after which we shall endeavour to determine upon what, if any, historical basis their statements are founded, by setting them in the light of the results of modern scientific research.

X. These traditions begin with vague tales of antediluvian settlers. Some say that three fishermen, blown by contrary winds from Spain, were the first to set foot in Ireland : but the orthodox story is that of Cesair, grand-daughter of Noah, who with fifty maidens and three men came in a ship to seek in Ireland a sanctuary from the Deluge. Ireland was chosen, because being free from serpents and venomous things, it might have been expected to escape the divine curse. (There are at least two different myths extant to account for the freedom of Ireland from serpents : this story is independent of them both.) However, even in Ireland the Flood found them out, and they perished, forty days after their arrival.

We may pause here for a moment to notice what this tale almost certainly is : for thereby we shall realise more clearly the nature of the material at the disposal of the old historians, and understand better their methods of dealing with the traditions which they have transmitted to us. It is fairly obvious that this story was originally the pagan Irish version of the almost universal Flood-saga. This saga, wherever found, usually tells of the total destruction of the world by a Deluge, and narrates the process by which it was re-peopled. That such was the case in the story before us is indicated by the disproportionate number of men and women involved. Probably the tale was originally of a rather savage nature, with gross elements which the redactors have endeavoured to tone down, though they have not been wholly successful in eliminating them.

If we endeavour to " get inside " the early Christian

redactors of the traditional history, we shall under-
stand better their treatment of such a tale as that at
present before us.   They had learnt it from their
nurses in childhood ; they had no reason to doubt
its substantial truth ; it was the more attractive, in
that it enabled them to begin the history of their
country at the earliest possible time.   As the Flood
is the preface to the story of Israel, so the Flood
should be the preface to the story of Ireland.   Naturally
they identified the Flood of the Cesair saga with the
Flood of Noah, and they connected the two sets of
dramatis personae by the device of turning Bith,
Cesair's father, into an otherwise unauthorised son
of the Biblical patriarch.   It is possible that there was
some chance coincidence of name in the original
story which made this identification easy.   They were
further obliged to modify the tale to suit their Christian
outlook.   Doubtless it contained pagan and otherwise
objectionable elements which had to be excised.
The essential character which, on the hypothesis laid
down above, the tale originally bore—that of a myth
to explain the re-peopling of the earth—had to be
altered : it could not stand in the face of the Scriptural
assertion that all flesh had perished except the inmates
of the Ark.   The redactors accordingly saved the
situation by making the people in the story of Cesair
wholly antediluvian.

This change plunged them into difficulties.   The
question would then have arisen, how had Cesair and
her friends found a historian, if they had thus all
perished in the waters ?   The redactors answered by
saying that Providence had resuscitated Finntan, one
of the three men in Cesair's company, and had
endowed him with a terrestrial immortality in order
that he might carry on the traditions of the past from
generation to generation.   The *naïveté* of this idea is
too preposterous to allow us to regard it as a mere
invention of the historians.   No one who wished to
be taken seriously—and unquestionably our historians
were very much in earnest—would have ventured to

tell so silly a story unless something like it was in the tale already.   The Finntan of the original story, before its editors tampered with it, must have been a supernatural immortal being : and in all probability the original tale informed its hearers that everyone who possessed some desirable quality, or who belonged to some especially favoured class, was descended from this divine member of the group of progenitors. As Cesair is daughter of Bith (" Cosmos "), Finntan is son of Bochna (" Ocean "), and so may possibly have been a sea-god.

It is important to notice that although for the original purposes of the story the three men are essential, yet they are not the leaders of the expedition. The head and director of the invasion is a woman. The significance of this fact we shall discuss at a later stage of our study.

XI. After the Flood Ireland lay waste for a long time, after which we hear of a succession of three invasions, much resembling one another in their general characteristics.   The first of these is the invasion of *Partholón* with his people, who after a sojourn in the country perished of a plague.   The second is the invasion of *Neimheadh*, whose followers suffered grievously at the hands of certain mysterious sea-pirates called *Fomhoraigh*, and who in consequence ultimately abandoned the country.   The third is the invasion of the *Fir Bolg*.[1] These, we are told, were the descendants of the children of Neimheadh, who had escaped from Ireland to Greece, where they were held in servitude.   From this bondage they fled, and returning to Ireland occupied it for a quarter of a century.

These three invasion stories are probably all versions of the one tale : they have obviously been redacted by editors familiar with the narrative of the wanderings of the children of Israel.

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[1] To be written thus : not " Firbolg."   The plural " Firbolgs," often to be seen, is a barbarism : " Fir Bolg " is itself plural.

XII. After the Fir Bolg came the Tuatha Dé Danann, the[1] " tribe of the goddess Danu." This mysterious people were adepts in magic, and by their arts they succeeded in dispossessing the Fir Bolg. We are expressly told, however, that they did not annihilate them, but that the descendants of those earlier people still persisted in the country.

XIII. Finally came the children of Míl, the " Milesians " of popular literature. These shewed themselves yet stronger than the Tuatha Dé Danann, both in magic and in prowess, and thus in their turn they dispossessed them and compelled them to take refuge in the fairy mounds throughout the country. Thus did the children of Mil occupy Ireland, and they will continue to do so, as certain of the pious old chroniclers do not fail to add, *usque ad finem mundi*.

Such are the native traditions. Before we proceed to examine into their meaning we must enquire what modern science has to say about the peopling of this or of any other country.

XIV. Mankind is scientifically divided into *Races*, a term too often misused. It must be clearly understood that Race depends simply and solely on physical characteristics, and on psychical and temperamental idiosyncrasies : the peculiarities with which a man is born. It has nothing to do with religion, language, political and social connexions or sympathies, or with any other of the peculiarities which a man acquires from his environment as he grows up. Two brothers may lose their parents in infancy, and may be adopted and brought up separately in surroundings so diverse that when they meet in adult life they find

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[1] This people is often called " Danaans," which is misleading · another current corruption is " Tuatha de Danaan," mis-spelling the third word, and treating the second (which is really the most important of the three) as though it were a French preposition ! Unauthorised and indefensible hyphens are sometimes inserted between the words, and the monstrous plural " Tuatha-de-danaans " evolved. Even writers who ought to know better have not spared us such solecisms as ·" So-and-so was a Tuatha-de-Danaan," or " Such-a-one was a Danaan king."

themselves differing in all these externals : but this does not affect the unalterable fact that they belong to the same race. A negro, who owing to some combination of circumstances can speak nothing but English, is no more a Teuton than is his cousin who has stayed at home and can speak nothing but his native tongue.

There are many criteria of Race, all of which have to be taken into account if we are concerned with the classification of mankind in general.[1] But when we are dealing with the racial affinities of the people of Europe, these can for most practical purposes be reduced to three : head-shape, colour of hair and of eyes, and stature.

These characters are measured by certain scales, and communities are racially classified according as *the average of their members* tends to one or other of the ends of these scales. This definition should be noted. Measurements and observations of single individuals tell us little about their racial affinities : but measurements and observations of a number of individuals sufficiently large to give us a trustworthy average, tell us much about the racial affinities of the community to which they belong. Ever since the Stone Age the mixture of races has been advancing steadily, so that it would be difficult, if not impossible, to find anywhere a man who is an absolutely pure representative of any given race. It is only by taking a sufficient number of measurements to eliminate from the average the effects of mixture and of individual abnormalities that we can obtain results that help us to classify *a community :* it is practically impossible by physical observations to classify a *casual individual.*

Head-shape is measured by means of a figure called the *cephalic index.* This figure expresses the breadth

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[1] The reader who is desirous of fuller information may be referred to such easily accessible books as Deniker's *Races of Man ;* for Europe, consult Ripley, *The Races of Europe ;* for the British Islands, Beddoe, *The Races of Britain.*

of the head [measured with a pair of callipers between the prominent points above the ears] as a percentage of the length [measured from a point just above the upper end of the nose to the most prominent point at the back of the head]. In other words, the cephalic index is the number obtained by the application of the formula $\frac{\text{breadth}}{\text{length}} \times 100$. Clearly, the greater the length in proportion to the breadth, the less will be the cephalic index; a low index, therefore, implies a long, narrow skull, and a high index a short, round skull. The figures thus obtained are classified according to various systems; the simplest, which omits subordinate divisions, is as follows :—

> Short heads (brachycephalic)............index above 80.
> Medium heads (mesaticephalic)........index between 80 and 75.
> Long heads (dolichocephalic)............index below 75.

Coloration depends principally on the pigment of the hair, which ranges from black to light yellow, and of the iris of the eye, which ranges from pale blue to a very deep brown. The distinction of skin-colour, which is the most obvious basis for a classification of mankind, is not applicable to the sub-divisions of the people of Europe, as all of these belong to the white-skinned races. People who are dark are called *melanochrous* (dark-complexioned); those tending to be light are *xanthochrous* (fair-complexioned).

Measurements of stature and of head-shape can be obtained from dead skeletons as well as from living subjects : but the test of coloration cannot be applied except to living persons : for the pigments of ancient races we are dependent on the testimonies of contemporary writers. In using the evidence of ancient writers we must always bear in mind their " personal equations." A Roman writer accustomed to the dark Italian complexions of his countrymen would certainly be apt to exaggerate the fairness of a xanthochrous community. In like manner a member of a short race will turn a tall-statured people into giants. These racial criteria are not altogether unalterable.

Under certain conditions of environment they tend to become modified, though it takes a very large number of generations to establish a modification permanently. Coloration and stature are more subject to change than is head-shape ; the latter, though not immovably permanent, is much more stable, and therefore is the more valuable.

XV. Now, when we apply these tests to the races of Europe, we find that, with the exception of a few small isolated communities here and there, they fall into three racial divisions. The first, which is found in the south of the Continent, and in its greatest purity in Spain, is melanochrous, dolichocephalic, and of medium stature and slight build : to this has been given the name " Mediterranean Race." The second, which has its seat in Central Europe, is brachycephalic : it is melanochrous, but lighter than the Mediterranean people ; and medium of stature, but of stouter build than the southerners. This is called the "Alpine Race." The third, the " Nordic," " Teutonic," or " Scandinavian " Race, inhabits the north of the Continent ; it is dolichocephalic, xanthochrous, and of tall stature.

XVI. Turning now to Ireland, we find that there are three sources of information open to us on the subject of her population : the bones found in ancient sites, especially graves ; the physical characteristics of the modern inhabitants ; and the evidence of ancient Irish literature.

XVII. Unfortunately the data as yet available from the examination of grave deposits and other ancient sites are of the scantiest. True, a considerable number of ancient graves have been opened ; but in the first place, the majority of the bodies found have been cremated ; and, in the second, in too many cases the excavation has been carried out either by ignorant labourers dreaming of buried treasure, or by equally ignorant and far more reprehensible collectors, in search of curiosities for their cabinets. Even when the excavation has been on a higher plane,

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there seems to be a fate against good ethnological results being obtained. Sometimes in the temporary absence of the excavators, roughs and idlers have come and destroyed the skulls left lying about : in one case the over-zealous investigations of the police destroyed the bones which had been carefully put aside for examination.[1] And sometimes the excavators have not deigned to give any information about the bones turned up, and when they have done so, have contented themselves with banalities such as " the man to whom these bones belonged must have been of great stature, and had excellent teeth."

The only extensive body of materials that I have been able to find bearing on the subject is a collection of crania unearthed in building a house in Ailesbury Road, near Dublin, in 1881. Besides these, I can discover nothing but isolated measurements of individual bones, scattered through books and the proceedings of societies.

1. The Ailesbury Road mound was described by Dr. Frazer, a well-known collector of antiquities in Dublin,[2] who secured the skulls and other objects for his collection. The accident of an interment of the Viking period having been found in the same place led him into flamboyant deductions about a massacre by the Northmen having taken place, with lurid details of barbarous cruelty. Thus, the skull of a person apparently of weak intellect was found, into the orbits of which some casual fragments of charcoal had been washed : this suggested to the too imaginative investigator the gruesome picture of an unfortunate imbecile having his eyes burnt out. There is really no reason to suppose that the heap of skeletons was anything more romantic than a mediaeval plague-pit. However, we must acknowledge Dr. Frazer's service in giving us a tabulated list of the measurements of the skulls which he obtained, 51 in number, as an appendix

[1] *JRSAI*, xi, 587.
[2] *PRIA*, xvi, 29, 116 : *JRSAI*, xxi, 391.
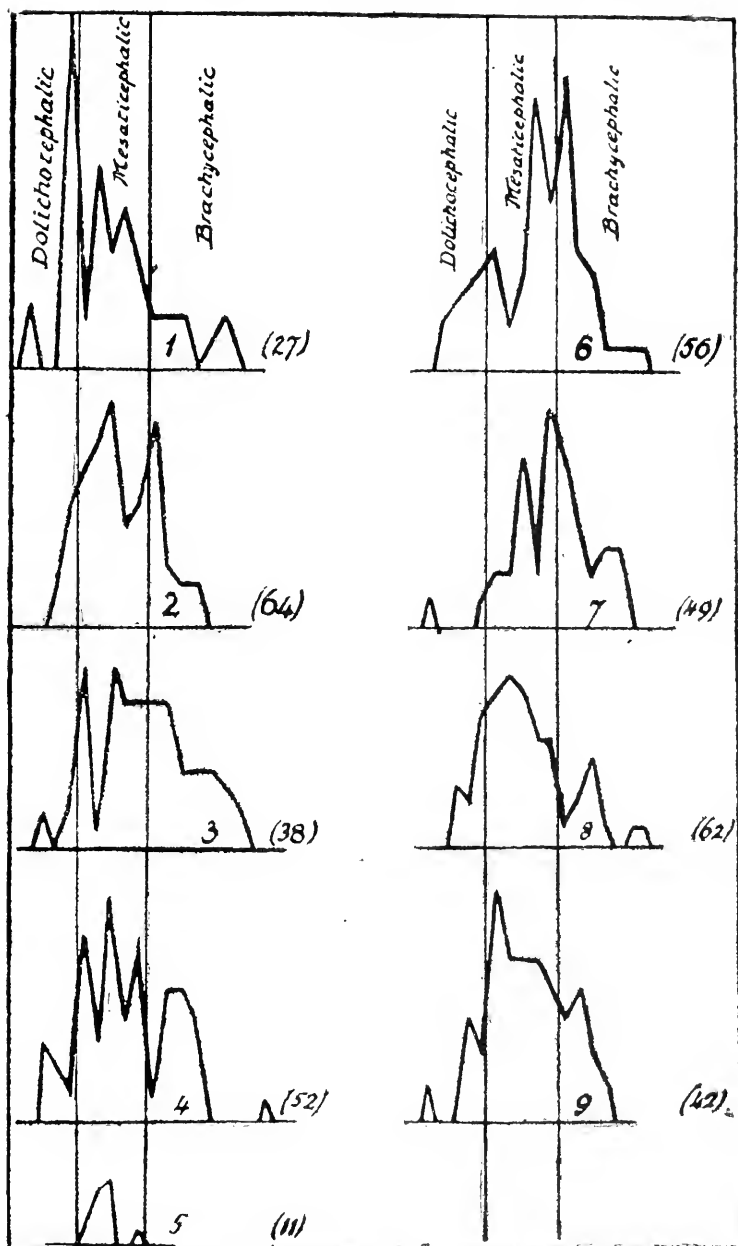
FIG. 1.—CURVES OF CEPHALIC INDICES.

(1. Ara : 2. Garmna and Leitir Muilinn : 3. Carna and Magh Inis : 4. Inis Bó Finne and Inis Earca : 5. Skulls from Inis Bó Finne : 6. Clíara and Inis Tuire : 7. Baile Cruaidh : 8. Muillead and Inis Cé : 9. Ailesbury Road, Dublin.)

(The figures in brackets denote the numbers of persons on whose measurements the curves are based).

to the Society of Antiquaries' paper referred to in the footnote.   From these measurements the curve of cephalic indices (fig. 1, No. 9) has been drawn. Of the 42 skulls whose cephalic indices could be determined, one was 70, three 73, two 74, seven 75, five each 76, 77, 78, four 79, three 80, four 81, two 82, and one 83.[1]

2. A series of eleven skulls from Inis Bó Finne, described by Dr. Haddon,[2] have indices, one 75, four 76, five 77, one 79.   Two others were doubtful. The curve will be found in fig. 1, no. 5.

3. Dr. Haddon also describes a number of skulls from old graveyards on Ara Mór ;[3] of eleven skulls, one is 73, four 74, two 75, three 76, and one 79.

4. John Grattan, of Belfast, one of the pioneers of Irish craniology, described a number of skulls in the *Ulster Journal of Archaeology*.[4]   Those noticed in the first paper cited are of Danish origin, and therefore are not relevant to our present purpose. Those described in the second paper may be classified as follows :—

(*a*) From Bronze Age interments at Baile na hAite (Giants' Ring), Co. Down : two, indices 74 and 75.

(*b*) From a cist, probably Bronze Age, at Domhnach Mór, Co. Tyrone : one. index 83.

(*c*) From an Iron Age tumulus at Mount Wilson, King's Co. : eight, indices 75 (two), 77 (five), and 80 (one).

From various mediaeval and modern interments throughout the country : one of 64 (imperfect : measurements untrustworthy), one of 65 (abnormal), 72 (two), 73, 74 (seven), 75 (two), 76 (four), 77 (three), 78, 79, 81, 83 (three).

5. Haddon[5] describes skulls from Oldbridge, Co. Meath, and also from the Phœnix Park, and from Co. Tyrone.   The Oldbridge skull was found in a Bronze

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[1] It is to be understood that by " 70 " in this and similar lists is to be understood a cephalic index lying between 69.5 and 70.5, and so on for the other numbers.

[2] *PRIA*, xix, 311.

[3] *PRIA*, xviii, 759.

[4] *UJA* I i, 198 ; vi, 27, 221.

[5] *PRIA*, xx, 572.

Age interment : its index is 73.5. The Phœnix Park
crania were found in a Stone Age tumulus to be
described later ; their indices were, respectively,
71.6, 76.8, and 78.0. The Tyrone skull is the same
as that already mentioned (4b above) ; Dr. Haddon
gives the index as 83.5.

6. In the excavations of Bronze Age carns at
Ceathramhadh Caol, Co. Sligo,[1] fragments of bones
and skulls were found from which some valuable
details were recovered, though they had been for the
greater part thoroughly burnt and broken into small
fragments. The cephalic index " hovered on the
limit between dolicho- and mesaticephaly, ranging
from 73 to 76."

The above does not claim to be a complete list of
the references I have collected. Space will not allow
it to be further extended here. The most important
are enumerated.[2] But the subject of Irish craniology,
both ancient and modern, is as yet an almost untilled
field.

Since the researches of Thurnam and of Beddoe
it has been a commonplace of British ethnology that
these islands were peopled in the Stone Age by a race
characterised by dolichocephaly, in affinity with the
" Mediterranean Race " of ethnologists : and that
the Bronze culture was introduced into Great Britain
by a round-headed race, corresponding to the
" Alpine " stock. This round-headed race did not,
however, find its way into Ireland in any great numbers,
and the low cephalic indices of the skulls above
enumerated bear this out. From these measurements
we infer that the Bronze Age culture was introduced
into Ireland by trade rather than by conquest or
invasion, and that, until the process of contamination
began after the Anglo-Norman conquest, no brachy-
cephalic race found a footing in the country. This is
not the same as to say that no brachycephalic *individuals*

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[1] *PRIA*, xxix, C, 342.
[2] Some further references are to be found in Haddon's paper,
PRIA, xviii, 759.

existed in the country.   That foreigners might find
their way to the country from time to time would be
only natural.   The Domhnach Mór skull, with an
index of 83.5, is probably one such ; and the com-
paratively high index of one of the Phœnix Park
skulls (78) points likewise in the direction of brachy-
cephalic admixture.

XVIII. We now turn to the second of the sources
of information on Irish ethnology ; the results of
observations on the modern inhabitants.

Here again we are but poorly provided with material.
Except a very valuable series of papers in the *Proceed-
ings* of the Royal Irish Academy, by Drs. Haddon
and Browne, on various districts and islands in the
west of Ireland, and some observations in Beddoe's
Races of Britain, we have practically nothing.   " It
is a remarkable fact that there is scarcely an obscure
people on the face of the globe about whom we have
less anthropographical information than we have of
the Irish."   These words were written in 1892 :[1]
they are still almost as true as they were then.

The districts that have been surveyed anthropo-
graphically are as follows: Ara Mór and the neigh-
bouring islands (Haddon, PRIA, xviii, 759 : Haddon
and Browne, *ibid.* 768); Inis Bó Finne and Inis Earca
(Haddon, PRIA, xix, 311, Browne, *ibid.* 317) ; Muil-
lead, Inis Cé and Port na Claidhe (Browne, *ibid.* 587);
Baile Cruaidh (Browne, PRIA, xx, 74) ; Cliara and
Inis Tuirc (Browne PRIA, xxi, 40) ; Garmna and
Leitir Muilinn (Browne, *ibid.* 223) ; Carna and Muigh-
inis (Browne, PRIA, xxii, 503).   From data supplied
by these surveys the curves of cephalic indices (fig. 1)
have been drawn.   The curves are set forth in the
geographical order of the places to which they belong
from south to north : the numbers in brackets denote
the number of persons examined in each district, but
the figures on which the curves are based have been
reduced to percentages.   In fig. 2 a similar curve is

[1] By Dr. Haddon : *PRIA*, xviii, 759
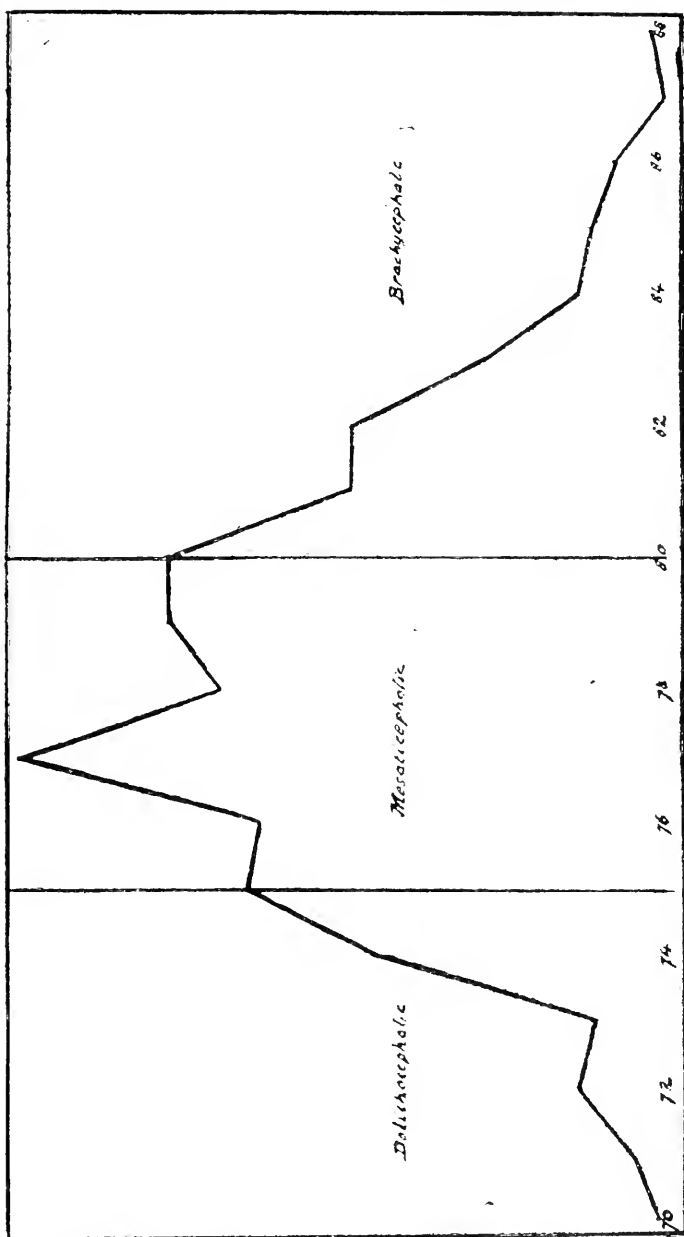
Fig. 2.—A Composite of all the Curves in Fig. 1 (except Nos. 5 and 9).

given for all the individuals examined by Drs. Browne and Haddon. In comparing these curves with the two curves in fig. 1 (nos. 5 and 9) which denote the cephalic indices of skulls, some allowance has to be made for the slight difference—two or three units—between the cephalic index of a living head and that of the skull belonging to it.[1]

These curves indicate a double strain in the modern population, the one element distinctly brachycephalic, the other on the border line between dolicho- and mesaticephaly. It would appear as though on the whole the brachycephalic strain increases in strength as we proceed towards the north ; but, almost throughout, the dolichocephalic strain is the stronger, the apex associated with it being in most cases higher than the brachycephalic apex.

When we examine these curves more closely, we see further that the brachycephalic strain is a recent importation. It hardly influences the Ailesbury Road or the Inis Bó Finne skulls at all. It may be taken as fairly certain that this strain is due to English influence. And the flattened apices on the brachycephalic side of the curve, as contrasted with the sharp apex of the dolichocephalic side, are an indication that the former element is a mixture, while the latter preserves a comparative purity of race.

These results, so far as they go, corroborate the conclusion at which we have arrived from the skulls, that the pre-Norman population of Ireland was dolichocephalic, this belonging either to the Nordic or the Mediterranean Race. To determine which we must take into account other criteria. The Mediterranean Race is of moderate stature and of dark complexion ; the Nordic Race is of tall stature and of fair complexion. What indications have we on these points ?

If we have scanty information on skull-shapes, our information on stature is infinitesimal. The

[1] The head is *wider* than the skull.

Ceathramhadh Caol skeletons[1] were comparatively short of stature : the men between 5ft. 5ins. and 5ft. 8ins., with one exceptional case measuring 5ft 9ins. ; the women were between 5ft. and 5ft. 5ins. This would predispose us to conclude that the Bronze Age builders of the carns from which these skeletons came were of the Mediterranean stock. A similar conclusion is reached by Dr. Haddon as a result of his examination of the Oldbridge and Phœnix Park crania :[2] and it is obvious even to a casual traveller that the average stature of the modern inhabitants of the country, especially of the women, tends to shortness, which fact points in the same direction.

The other criterion—coloration—obviously fails us in observations on grave-deposits ; but we have a valuable source of information on this subject in the personal descriptions scattered through the ancient literature of Ireland.

XIX. It is not to be inferred that, when a writer describes for us some ancient hero, he is giving us a pen-picture, such as we might expect from a writer of a modern obituary notice. It is really something more valuable. The author is glorifying his subject by ascribing to him all the traits that went to make up the conventional standard of beauty at the time when he wrote. Contrariwise, when some character is described whom the author wishes to make objectionable, he is endowed with the conventional type of ugliness. Now, the standard of beauty is simply the normal racial standard ; the ruddy cheeks of a healthy girl, admired in Europe, are hideous to a Japanese, accustomed to his yellow-skinned beauties—so, at least, a Japanese friend has assured me. Therefore these descriptions are not so much portraits of individuals as composite photographs of a race. They are like the caricatures of typical representatives of one nation in the humorous journals of another,

[1] *PRIA* xxix, C, 342
[2] *PRIA* xx. 582-3.

showing what features strike an observer who looks from the outside on the people thus criticised, as a whole.

We may, therefore, give here some descriptions, collected from ancient Irish literature. To make the list exhaustive would be superfluous ; a few typical examples is all that is necessary. The examples here quoted are culled in a hasty search through the R.I.A. facsimiles of *Leabhar na hUidhre* and of the *Book of Leinster*, pp. 1-280 : the rest of the *Book of Leinster* does not seem to offer material of value for our present purpose. Passages in verse are omitted, as the adjectives are so often used merely *metri gratia* that they would be misleading. The original Irish can be found in the facsimiles by the references in brackets (page, column, line) : to print it here would occupy too much space.

We begin with *Leabhar na hUidhre* :—

1. (24b-25a) In the fourth day came the woman to them. Beautiful came she . . . she had *golden hair* upon her.

2. (41a26) There came a *great black ugly* warrior.

3. (52a40) No one in the crowd managed to look upon her before there flowed to her shoulders *soft branchy truly-golden hair* [said of a queen].

4. (84a17) Then the *black cropped* man overtook them [and a very unflattering description is given of him, and of his companion] a great *black* woman with a huge mouth.

5. (87b8) Cormac Condlongas is described as having *fair flaxen* golden hair on him, a face just, fair, ruddy, beardless.

6. (88a25) The Cruithne in Da Derga's Hostel are described as three *big brown* men with three round scalps of hair, equally long behind and before.

7. (88b3) The pipers in the same establishment had *yellow-white hair* on them.

8. (89b9) The *golden-yellow* hair of the sons of king Conaire is alluded to.

9. (90a19) Three *big brown* men, with three brown scalps on them.

10. (90 *ad fin.*—91 *ad init.*) Conall Cearnach is thus described : White as snow one of his cheeks, red and speckled as a fox-glove the other cheek. Blue as a hyacinth the one eye, black as the back of a beetle the other eye. The filling of a harvest-basket was the bushy head of *golden hair* upon him.

11. (90b32) The trio in Conaire's company are described as *fair* in their hair and eyelashes.

12. (91a15) Conaire's *golden* hair is alluded to.

13. (92b5) The cupbearers of the king of Teamhair have *white-yellow hair*.

14. (93–4) On the other hand the swineherds of Conaire named Dubh, Donn, and Dorcha (" Black, Brown, and Dark ") have three *black* scalps upon them.

15. (93–25) The Saxons at Da Derga's Hostel have nine *very yellow* manes on them.   The king's guardsmen (95a7) are similarly described.

16. (95b34) The three giants of Fer Falga are, Three big *brown* men with *black*, horse-like hair on them, reaching their heels.

17. (96a17) Da Derga has *red* hair ; so (96a38) have the three champions from the Sidh.

18. (96b15) Fer Caille is a *black*-scalped man.

19. (96b23) The three sons of the king of Britain have *yellow manes*.

20. (105b44) Loiguire has hair black at the base, red in the middle, and as a diadem of yellow gold at the top.

21. (113b3) Cu Chulaind is described as a *black*, sorrowful man, *black* and cropped . . . black as the side of a *dub-fholach* his two eyebrows.   The same description reappears in 122b11. In both places his charioteer is described as having *red* hair.

22. (120a19) The fairy promises Condla the Red that if he will accompany her to fairyland he will have a " *yellow* top " above his ruddy face.

These twenty-two passages already suggest certain deductions.   All persons of importance native to Ireland are described as having golden hair.   Most persons in subordinate positions, and those who are spoken of with scorn, are dark-haired.   The coloration of the eyes is not so much emphasised, but there is evidence that the superior classes had light-coloured eyes.

Next, we notice that, as a rule, yellow hair is described as long and flowing, while dark hair is described as close-cropped, or by a word that suggests this. The only exception is no. 16, where certain *foreign* giants are described.   The regular word for a head of yellow hair is *mong*, " mane," the regular word for a head of dark hair is *berrad*, a derivation from the

verb *berraim*, " to shave " : the word " scalp " very
fairly expresses its meaning.   This word is sometimes
qualified with prefixed adjectives, as *cruind-berrad*,
" round scalp " (compare the expression " Round-
heads " applied to the close-cropped seventeenth-
century Puritans) : *dond-berrad*, " brown scalp " :
dub-berrad, " black scalp " : very rarely with an
adjective denoting a light colour.

This fact can hardly be dissociated from a passage,
with its gloss, in the Brehon Law tracts,[1] where it is
prescribed that a person of the rank of a *briugu*, to
maintain his position, should have a hundred men
i mbesaib mogad " in the manners of slaves " : explain-
ing which, O'Davoren in his *Glossary* (loc. cit. in
footnote) renders the word *bes* by *berrad*, " tonsure."

The peculiar " composite " descriptions, as we
may call them, of Conall Cearnach (no. 10), and of
Loiguire (no. 20) are possibly a harassed redactor's
attempt to reconcile contradictory descriptions in
different versions of a story before him.   A gloss that
has crept into the text of the Book of Leinster (267b8)
suggests this : the description of Dubhthach Doel
Uladh there given reads thus :—" Wild black hair on
him, a mild expression in one of his eyes, a foam of
crimson blood in the other : that is, *a gentle kindly
expression at one time, a fierce expression at another
time.*"

The passages thus cited from Leabhar na hUidhre
thus enable us to distinguish two classes of the
community : the ruling classes, marked by their
long flowing locks, and the enslaved classes with
close-cropped black or brown heads.   That both
these classes were dolichocephalic has been already
indicated : they must therefore belong to the Medi-
terranean and to the Nordic stocks respectively.
That the dark people are regularly described as *mór*,
" big," would seem to militate against this identifica-

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[1] *Ancient Laws of Ireland* (Rolls Series) V, 76, line 15 : see
O'Davoren's *Glossary* in *Archiv für celtische Lexikographie* II,
p. 235, s.v. *bes*.

tion.   For the Mediterranean stock is of shorter
stature than the Nordic.   But *mór* does not necessarily
mean " of tall stature."   It is rather, in these contexts,
a term of reproach, meaning something like " lumpish "
or " clumsy."   The word " clodhopper " expresses
the sense which the writers seem to wish to convey.

There is, however, one remarkable exception to
all these rules.   The great Ultonian champion, Cu
Chulaind, is described as being very dark, and close-
cropped.   This is at first sight surprising : but the
mystery resolves itself when we remember that the
historical character, who is at the basis of the Cu
Chulaind myth, was not a native Irishman at all.
His other name, or rather appellation, Setanta Becc,
" little Setanta," sufficiently identifies him as a
member of the otherwise obscure Brythonic tribe of
the Setantii, whose seat was somewhere about the
mouth of the Mersey.   In agreement with his foreign
origin he was exempt from the strange disease called
cess noinden which attacked the Ultonians at a critical
moment in the fortunes of the province.[1]   It is not
surprising that a king of the Ulaidh should have
imported from abroad a fire-eating bravo whose
prowess was notorious, notwithstanding his diminutive
stature (which is, perhaps, at the basis of the legends
of his feats as a small boy), and his epileptic affection
(which is possibly the nucleus of fact round which
have crystallised the queer stories of his " distortions "
in moments of excitement).

We may now turn to the Book of Leinster.   If we
find that the indications which it contains agree with
those of Leabhar na hUidhre, we may fairly take the
thesis as proved.

1. (30d38) Dub, Dorcha, and Teimel (Black, Dark, and
Darkness) are the three cup-bearers of Brian, Iuchar, and
Iucharba, the gods of the Tuatha Dé Danann.

[1] The MS. Harleian 5280 tells us categorically that Cu Chulaind
as exempt from this malady *ar nar bó don Ulltaib do*, " for he
was not of the Ulaidh."

2. (55a46) The seven persons called Mane are described as having cropped hair on them.

3. (55a50) The seven sons of Maga had *berrtha nua* " fresh-shaven scalps."

4. (55b4) The people of Cormac Condlongas had broad scalps with *white-yellow all-golden* flowing hair on them. [This is one of the few passages in which the word *berrad* is associated with a word describing a light colour].

5. (55b36) She had a ruddy face, a *grey* laughing eye, red thin lips, shiny pearly teeth . . . white as the snow that fell in one night was the sheen of her skin and her flesh . . . *white-yellow long, all-golden* hair on her ; three tresses of her hair about her head, another tress shadowing her calves.

6. (68a7) Cu Chulaind is described as having fifty bright *yellow* locks on him, in one of his transformations. But immediately afterwards we read of a bright white bald spot on him, which takes the force out of the description.

7. (71b2) Fergus has bushy twisty *yellow-white truly golden* loosened hair. He changed his racial character in the other world, however, for his ghost (245b23) has *brown* hair.

8. (76a23) A man from the *Sidh* has a broad scalp with curly *yellow* hair. Compare no. 4 above.

9. (78b30) Cu Chulaind's hair is here described as having three colours, like the hair of Loiguire in no. 20 of the previous series of extracts. The doubt as to the colour of this champion's hair (compare no. 6 above with no. 21 of the previous series) is a further argument in favour of the explanation of " composite " descriptions, which we have just given. Compare also no. 29 below.

10. (90b4) Mane Mathremail and Mane Athremail are described as having *folt cass-[dond]* and *folt cassbuidhe* " brown curled hair " and " fair curled hair " respectively.

11. (97a23) Conchobar has *white-yellow* hair curling, well-ordered . . . a *grey* eye in his head, a yellow curly beard on his chin.

12. (97a37) Cuscraid Mend has *white-yellow* hair and a light curling beard.

13. (97b7) Sencha mac Ailella is a *fair* broad-headed warrior . . . *brownish-yellow* hair in locks on him, a *dark-blue* eye . . . a forked bright curly beard. Sencha's son, Caini, has flowing *yellow* hair (267b44).

14. (97b *ad fin.*) Eoghan mac Durthachta is a white long big man . . . *brown dark* hair on him, smooth and thin on his forehead.

15. (98a17) Loegaire Buadach has light *grey* hair on him, great *yellow* eyes in his head.

16. (98a31) Munremur mac Gercind has a scarred ruddy face and a *grey* sparkling eye in his head.

17. (98a45) Connad mac Morna has a *brown* proud round eye in his head, and very curling *yellow* hair.

18. (98b18) Reochaid mac Fathemain has *reddish yellow* hair, well proportioned, tall, broad above, slender below, thin red lips, shining pearly teeth, white skin.

19. (98b33) Fergus mac Leithe is a thick-limbed warrior, with *brown* hair, and a shining proud eye.

20. (99a10) Feradach Find Fechtnach is a *white yellow* warrior, all white is his hair, eye, beard, eyebrows, and clothing.

21 (99a37) Celtchair mac Uthechair has rough grey hair.

22. (99a50) Eirrge Echbel is a warrior with fat paunch and lips, broad-headed, with *brown* very curly hair.

23. (99b8) Mend mac Salcholgan has *ruddy* hair, great reddish eyes.

24. (99b23) Fergna mac Findchonna is a broad-cheeked *brownish* warrior, with *black* hair.

25. (100a37) The *tricha cét* of Mag Murthemne have long *yellow* manes, and clear royal eyes.

26. (117b18) The grotesque infant Amairgen, whom the narrator desires to make as ugly as possible, has *brown-blackish-red* eyes and rough hair.

27. (253a43) He was long-cheeked, bright, broad-faced ; curling *golden-yellow* limber hair flowing down to his shoulders ; a proud burning eye, blue and clear in his head.

28. (265b *ad fin*) Conchobar has a *fair* slender forked beard and *yellow* hair.

29. (266a9) Cu Chulaind is a little *black-browed* man.

30. (266a43) The Tuatha Dé Danann have *ruddy brown* beards, forked.

31. (266a43) Conall Anghlonnach is a wrathful *brown* warrior.

32. (*ibid*) Conall Cearnach is a *fair* warrior.

33. (*ibid*) Loiguire of Ráith Immill is a valiant warrior with *yellow-red* hair of the colour of honeycomb, a *brownish black* forked beard.

34. (266b15) Uma mac Remanfissig, Errgi Echbel, and Celtchair mac Uthechair are a hideous trio . . . with very *brown* rough hair.

35. (266b43) Trisgatal is *dark-browed* . . . with a broad face.

36. (267a32) Roimid, Conchobar's fool, has a *black* pointed scalp (*suasmael*) and large eyes all white, a smooth blue Ethiopian face.

37. (275b29) Fiachna, son of Retach of the Sidh-folk, has *golden-yellow* hair down his back.

38. (277b22) Fedelm *fholtbhuidhe*, "the yellow-haired" is described as a noted beauty.

These passages will suffice, I think, to show clearly
what was the normal standard of beauty, and the
reverse, and thus will afford a test of the normal
physical characters of the inhabitants of Ireland at
the time of the development of the literature from
which they are extracted.   We must add the descrip-
tion of king Cormac mac Airt from the Book of Bally-
mote (edited with translation by Stokes in *Irische
Texte*, III, 186) " hair-braids slightly curled, *all golden*
upon him . . . like blue-bells his eyes, like the sheen
of a dark-blue blade his eyebrows."   And when
Cormac, in the disguise of a shepherd, withstood the
usurper who had seized his throne, and exposed the
fallacies of his judicial decisions, *Flaithiusa h-Erend*
tells us that the king looked on him and saw " that he
had a royal eye in his head " ; which must mean
simply that his eyes were of the fair colour associated
with royalty, not of the dark colour associated with
the menial work which for safety he had assumed.
Compare no. 25 of the extracts from the Book of
Leinster.

We must not expect ethnological consistency in
these descriptions, any more than we can expect it
in the individuals that compose a race ; the far-reach-
ing results of blending of opposite elements are ever
present to induce complications.   Indeed, a too
rigorous consistency would lead us to suspect a
mechanical artificiality in the descriptions which
would deprive them of all value.   There is just enough
inconsistency to avert this suspicion, while maintaining
sufficient uniformity to indicate a rule.   Those whom
the chronicler wishes to exalt—always with the striking
exception of the foreigner Cu Chulaind—are fair,
with long flowing hair.   Those who are abased, in
position or in morals, are as a rule dark, with close-
cropped or " rough " hair ; in some cases where there
is no suggestion of abasement there will be a peculiarity
of name or otherwise which suggests that the person
is of another stock.   It is noticeable that certain persons
are described as " broad-faced."   Broad faces usually

go with brachycephalic skulls, and as these broad-faced persons, few in number, are almost (not quite) always described as dark, they indicate the presence (already suggested by the skulls) of a few individuals of the Alpine stock, though not in sufficient numbers to reduce appreciably the dolichocephalic average.

When we find in any country two stocks thus carefully kept apart, so that they can be distinguished even by ancient writers with no scientific knowledge of ethnology ; separated from one another by social position running parallel with racial character—a distinction similar to that between the Spartans and the *perioeci* in ancient Laconia : we are safe in inferring two things. First, that the distinction was maintained by obstacles to intermarriage. Secondly, that the ruling classes were an importation, a tribe of conquerers, who had subdued and reduced the original inhabitants to a subordinate position, if not to actual serfdom.

XX. In the light of these results, let us look back once more at the native traditions of the successive invasions, which we have already analysed on an earlier page. We have seen that the stories of Partholon, of Neimheadh, and of the Fir Bolg, are all three versions of the one story, before they were worked over by the historians who have transmitted them to us. We cannot go far wrong if we suppose that this tradition was the tale which the aboriginal people had among themselves about their *origines*. The story of the Milesians, in which a knightly expedition came over-sea to avenge the murder of one of their own kin, and by dint of their superiority in magic and in prowess conquered the country—that is the tale which the xanthochrous dominant race told about themselves. On the other hand, the story of sea-pirates called Fomhoraigh, hideous to behold, with single legs, single hands, and single eyes, led by a disgusting fury of a woman with " four eyes in her back "—that is the tale which the subdued aborigines told of the conquerers ; the Milesian invasion from

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the point of view of the vanquished.   The conquerers were probably a small community, holding the country by a sort of feudal tenure : and just as the castles appear for the first time on the establishment of Anglo-Norman feudalism, so the crannogs or lake-dwellings appear for the first time on the establishment of this earlier feudalism.   These all date from after the beginning of the Iron Age ;   no alleged Bronze Age crannog will bear investigation.   This fact dates the immigration of the xanthochrous conquerers to the beginning of the Iron Age.

It will be noticed that in thus drawing analogies between the native traditions and the ethnology of the country we leave the Tuatha Dé Danann on one side.   This people stands on a different footing from the rest.   That they are a semi-humanised pantheon of gods is the theory about them which has become generally accepted.   For the present we may so far acknowledge the substantial truth of the theory as to pass over the Tuatha Dé Danann in any investigation of the ancient races of Ireland and the remains that they have left behind.

The whole civilisation of the Iron Age, with the Celtic language, was probably imported by the xanthochrous invaders.   In fact, it was their iron weapons, the recollection of which still survives in folk-tales in the terrible flashing " sword of light," which gave them their advantage.   But it is to the Pre-Celtic stock that the majority of the modern inhabitants of the country belong.

It might have been expected that racial analogies, closer than is actually to be found, should exist between these people and the inhabitants of those parts of Scotland where the Pictish language and Pictish social institutions were maintained down to historic times.   But this would be to fall into the error against which a warning has been already given of confusing the external attributes of language and social institutions with the innate physical attributes of race.

As we have already seen, the aborigines with whom we are concerned are to be grouped with the Mediterranean stock, whose modern representatives form the populations of Italy and of Spain. On this account they are often called " Iberian." This, however, is assuming a little too much : and for the reason stated in the previous paragraph, " Pictish," a name sometimes used for them, might be misleading. We prefer to use the non-committal term " Pre-Celtic," by which is to be understood the people that inhabited Ireland before the introduction of the Celtic vernacular.

CHAPTER III

THE STONE AGE

I. Three questions present themselves for consideration at this stage of our study. (i) What was the environment in which the earliest inhabitants of Ireland found themselves : or, rather, to state it more exactly, what was the condition of the country at the moment when the first men landed on her shores ? (ii) Whence did man first come to Ireland, and how did he succeed in finding his way thither ? (iii) To what stage of civilisation had he attained when he first set foot on Irish soil ?

II. To answer the first question fully, it would be necessary to give a synopsis of the whole geological history of the country ; for effect follows cause, in an endless chain, back to the beginning. Such an exhaustive treatment of the subject would, however, be here out of place. We may pass over in silence the long succession of ages that preceded the appearance of humanity. A preliminary question will then arise, namely, When did man first come to Ireland ?

There is no unquestioned evidence for the human occupation of Ireland during the Palaeolithic period. Discoveries of Palaeolithic, and even of Eolithic

implements, in the country have been announced from time to time. Thus, Mr. E. F. J. Bennett has described a number of these objects from the north of Ireland.[1] But Eoliths generally are under a cloud, and the Belfast specimens do nothing to dispel the mist of doubt that enwraps the entire subject. Mr. Knowles, again, describes certain flints from Baile an Ridire, Co. Antrim, which he found beneath the boulder-clay.[2] Boulder-clay is a glacial deposit, and artificial objects found underneath it would almost of necessity be pre-glacial and palaeolithic.[3] But a committee of the Belfast Naturalists' Field Club examined them, and pronounced them to be not of human workmanship.[4] Again, the Rev. F. Smith has described " palaeoliths " which he has found on the coasts of both Scotland and Ireland :[5] but all the critics of his book, so far as I have seen, have agreed to condemn this writer's theories, treating his palaeoliths as mere pebbles in their natural and unworked state. Early flints, such as have been found in the Latharna gravels, have been by many called Palaeolithic.[6] But this theory hardly attaches sufficient weight to the geological evidence, set forth later in this chapter, in favour of their post-glacial date. The same is true of Mr. Knowles' attempt to prove other Irish implements in flint and stone to be Palaeolithic.[7]

[1] *Eoliths in Belfast and Bloomsbury*, Geological Magazine, new ser., decade iv, vol. x, p. 127

[2] *Flint flakes in the glacial gravels of Ballyrudder, near Larne, County Antrim*, BNFC, II, iii, 410.

[3] There are a few special cases in which a post glacial-object might work its way underneath a bed of boulder-clay, but these are so rare as to be negligible.

[4] See the report, BNFC, II, iii, 518.

[6] *The Stone Ages in North Britain and Ireland*. London, 1909.

[6] The most serious attempt to throw back these flints into the Palaeolithic period is that made by Mr. Reginald Smith (*Congrès d'archéologie préhistorique*, Geneva, 1912, vol. i, p. 414 : *Archaeologia*, vol. lxiii, p. 141).

[7] *The Antiquity of Man in Ireland : being an account of the older series of Irish flint implements.* JAI, xliv, 83.

When the gravels of Latharna were deposited, the relation between the land and the water was not the same as it is to-day ; in other words, the contour of the coast was a very different line from that familiar in our modern maps.   There is evidence (the nature of which will be found fully discussed in any text-book of Geology) that the Ice Age was followed by a series of land oscillations, upwards and downwards, in which certain areas of land now submerged were for a time exposed, and certain areas now exposed were at other times submerged.   The traces of these oscillations have been most fully studied in Scandinavia, and the oscillation-periods have received names derived from the molluscs found in deposits of the Baltic Sea, characteristic of the successive periods.   Immediately after the final retreat of the ice, the land in the Baltic area was so deeply submerged that Norway and Sweden were reduced to the form of a long narrow island, having a wide sea, open at both ends, between it and the mainland of what is now Russia.   This sea is known to geologists as the *Yoldia Sea*, from the name of a mollusc found in large numbers in its deposits.   The submergence of the land was followed by an emergence, in which the land rose to a height sufficiently great to close the Baltic completely.   The salt Yoldia Sea thus gradually gave place to an inland fresh-water lake, known as the *Ancylus Lake*.   Subsequently a second submergence of the land took place, but not nearly so deep as the Yoldia submergence.   The Baltic was only slightly larger, comparatively speaking, than its present area.   This stage of the sea is called the *Littorina Sea*.   From this phase the modern conditions evolved by a gradual re-emergence of the land.

In Scotland, during the Yoldia period, the land was so far submerged below its present level that a point which would now be at sea-level would then have been a hundred feet lower.   When the land afterwards rose to its present elevation, the old beach rose with it, and still remains at an elevation of a

hundred feet above sea-level, to shew where the sea once ebbed and flowed. A beach of later formation, at the present height of about fifty feet above sea-level, remains to mark an intermediate stage in the oscillation.

The beaches corresponding to the Ancylus period are, naturally, now submerged, and are not available for examination : but this period has left its traces in beds of peat, found here and there below the present sea-level. Where there is peat there must once have been a forest, and forests cannot grow beneath the sea : therefore a place where submarine peat occurs must once have been above the surface of the water.

At the height of twenty-five feet above sea-level is another raised beach, traces of which exist in both Scotland and Ireland ; this belongs to the period of the Littorina Sea.[1]

The regions round the Baltic sea were destitute of human inhabitants during the Yoldia period, and the same is true of Scotland and Ireland. The first known remains of man in Scandinavia date from the time of the Ancylus lake. In Scotland and Ireland, however, we do not find certain evidence of human occupation till we reach the time of the Littorina Sea. The twenty-five feet beach, both in Scotland and in Ireland, contains the earliest certain human relics.

We may picture the country when its first inhabitants arrived, as covered with vast pine forests interspersed with ancient oaks.[2] Through these forests the rivers

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[1] When the 25-feet beach is found associated with peat, the beach overlies the peat : but the contrary is the case when peat is found associated with the 50-feet and the 100-feet beach. This shows that the two last-named were formed *before* the peat, and the first-named *after* the peat. Thus we cannot explain the 25-feet beach as being, like the 50-feet beach, an intermediate stage in the first oscillation.

[2] The following note in Vallancey's *Collectanea*, vi, p. 289, well illustrates the sequence of forests—pine succeeding oak—which has also been proved by the stratification of timber in the Danish peat-mosses : " The late Mr. Evans, engineer, informed me that in cutting the line of the Royal Canal through the bog of Cappagh,

meandered, unrestrained—just as the great rivers of South America still flow through the forest-clad interior. Here and there were dangerous bogs and marshes, kept moist by frequent rains ; for the climate was colder and moister than it is at present.

Animal life abounded, including in its scope many species that have now disappeared from the country. Notable among these creatures was the Irish Elk (*Cervus giganteus*), whose remains have been found over the greater part of Europe, but which seems to have thriven in Ireland in especial abundance— though its great horns, often measuring as much as fourteen feet from tip to tip, must have hampered its movements in the afforested parts of the country. It was for long a disputed question whether the elk was or was not contemporary with man. Numerous papers discussing this problem will be found in the early volumes of the *Journal* of the Geological Society of Ireland. Elk-bones which seemed to have been cut and grooved were brought into evidence, but it was shown that the rubbing of one bone upon another in a boggy soil, liable to disturbance, could have caused these marks without human aid. In 1834 it was announced that a corral of stakes had been found at Ceannanus, Co. Meath, in which were the bones of many elks that had been entrapped.[1] This discovery does not seem to have been confirmed : but it has often been suggested in conversation, if not in writing, that the numerous skeletons of elks found in the narrow bog of Baile Biadhtaigh, Co. Dublin, belonged to animals which also had been corralled. For this theory there is no evidence : it is not difficult to

between Dublin and Kilcock, at the distance of 26 ft. he met with fir trees which apparently had been planted in avenues ; and at this depth he found a lump of tallow weighing about two hundred-weight ; that he sunk 14 ft. below these trees in bog, and came to a hard bottom on which were oak trees prostrated." The " avenues " need not be taken seriously ; the " tallow " was perhaps a buried keg of bog butter.

[1] *Gentleman's Magazine*, 1834, II, p. 148.

imagine a combination of natural circumstances which had entrapped the animals in the valley that contains the bog, at some time of flood, so that they were unable to escape.[1]

The cave of Baile na mBaintreabhach, to be described later in this chapter, has, however, given more definite evidence, favouring the belief that the elk actually survived till the appearance of man in Ireland.

Another animal indigenous to the country at the time of man's first appearance was the Wolf. This destructive creature is of great importance in considering archaeological problems. Many of the defensive fortifications, some of which we have to study in these pages, were intended to guard against wolves rather than against human foes. The wolf was hunted in Ireland in 1370, according to Campion's *History*. In the *Journal* of the House of Commons it is recorded that Sir John Ponsonby recommended the extermination of wolves and foxes in 1662 ; and according to Smith's *History of Kerry* the last wolf was killed in Ireland in or about 1710.[2] The presence of wolves made the forests even more impassable than they would have been by nature, and thus put difficulties in the way of intercourse between the different parts of the island. The wolf, therefore, had some considerable influence on the social history of the country.

The Wild Boar was also plentiful even down to the

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[1] See a paper by Mr. W. Williams, entitled *An attempt to elucidate the History of . . . . the Irish Elk*, in the *Scientific Proceedings* of the Royal Dublin Society, New Series, II (1880), p. 105. The author of this article believes that the elk was an interglacial animal, and that those found at Baile Biadhtaigh had been mired and drowned. In any case we need not assume the simultaneous annihilation of a herd of elks: the numerous individuals might have been drowned one by one, during a long succession of years.

[2] I borrow these references from a paper entitled *Notice of Animals which have disappeared from Ireland during the Period of authentic History*, by John Scouler (*Journal* of the Geol. Soc. of Dublin, i, 224). Mr. T. J. Westropp informs me that he has found evidence for the existence in Ireland of the wolf at an even later date.

seventeenth century.   It was degenerate already in the time of Giraldus Cambrensis, who describes the Irish boars as *exigui, difformes, et fugitiui*.[1]   In the crannog sites boar bones and tusks, the latter often of great size, are very common ; it was evidently a favourite object of the chase, as well as a staple article of food.   The Fenian legends are full of boar-hunts, and the ferocity of the animal is vividly mirrored in these tales.

The Bear was contemporary with man, though probably in comparatively small numbers, at least down to the Bronze Age.   Part of a bone from the fore leg of a bear, worked into a pin, was found in one of the carns at Ceathramhadh Caol, Co. Sligo ;[2] and bear bones were also found in the cave of Baile na mBaintreabhach and at Elderbush Cave, Newhall, Co. Clare.[3]   The tooth of a bear was also found in a shore site at Tráigh Lí, Co. Kerry.[4]   It was probably commoner at the *beginning* of the human occupation of the country.

Many smaller animals and birds, now rare or wholly extinct, might be enumerated, if we had any special reason to do so.   We are here concerned only with the conditions which affected human life : and we have said enough to shew that it was no light task that lay before the first canoe-load of explorers who landed in Ireland—to colonise a country, thus run wild, thus infested with savage animals, with forests, lakes, rivers, and marshes blocking the way almost at every mile : and to subdue it with no better tools than a handful of rude flint chips.

III. We now turn to the second question which we set before us at the beginning of this chapter.   Whence came these colonists, and how did they make their way to Ireland ? The first part of this question admits of but one probable answer.   The oldest remains of

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[1] *Topographia Hiberniae*, I, xix.
[2] PRIA, xxix C, 337.
[3] TRIA, xxxiii B, 18
[4] PRIA, xxii, 360.

man in the country have been found in the north-east corner ; and it is just at the north-east corner that it approximates most closely to other lands.   Maol Chinn Tíre in Scotland is only a little more than ten miles distant from the nearest point of the Irish coast. Latharna, where the gravels containing the earliest flints of Ireland have been found, is less than thirty miles from the nearest point of the Scottish coast. By either of these routes the colonists might have made their way.

In the older books on prehistoric archaeology much is made of the so-called *hiatus* existing between the Palaeolithic and the Neolithic periods.   On the further side of the chasm is the hunter, unacquainted with pottery and with the domestication of animals, and living under conditions differing widely from those of the present.   On the hither side is the agri-culturist, freely employing the arts unknown to his predecessor, and living under modern climatic conditions.   But no transitional type had been found : the passage from the one to the other was apparently abrupt, and no one could tell how Neolithic man, with his special arts, had taken the place of his Palaeolithic predecessor.

As is usual, however, the hiatus existed in modern knowledge, not in the orderly course of ancient history.   The first serious contribution towards a bridging of the gap was made by Edouard Piette, in his excavations of the Pyrenean cave known as Le Mas d'Azil.[1]   The deposits on the floor of this cave shewed that it had been a refuge of early man at different times, divided by intervals when owing to the overflow of a river the cave was full of water.   At the bottom of the accumulation covering the rocky floor was a layer containing Palaeolithic tools. Later layers contained Neolithic implements.   Inter-calated between these was the long-sought transitional

[1] The subject of the Azilian civilisation can be conveniently studied in Déchelette's *Manuel d'archéologie*, Part II, chap. i (vol. I, p. 307), or in Sollas's *Ancient Hunters*, chap. xiii.

civilisation.   The flints were of the same style as
those of the end of the Palaeolithic period.   The bone
tools were also similar, but much degenerated.   The
exuberant art which arouses our wonder, as we con-
template the paintings on the walls of late Palaeolithic
cave-dwellings, had dwindled down to unintelligible
marks daubed with paint on pebbles.   The reindeer,
the chief animal of the late Palaeolithic period in the
region of the Pyrenees, had almost disappeared.
This had an important consequence.   One of the
principal instruments of the end of the Palaeolithic
period was the fishing harpoon.   This was made of
reindeer-horn, a substance which, like wood, is solid
almost throughout to its heart.   The harpoon of rein-
deer horn could, therefore, be worked to a cylindrical
form.   But now the weapon had to be made of stags'
horns, which have a hard outer rind and a useless
spongy heart.   The new harpoons, being made of the
outer surface of the horn, had therefore to be flat.
The flat harpoon is the leading criterion of Azilian
culture.

Since Piette's investigations at Le Mas d'Azil other
transitional forms of civilisation have come to light,
shewing that the passage from the Palaeolithic culture
to the Neolithic was very far from being a simple
process.   It is evident from the associated human
remains that new races entered Europe from without,
about this time, doubtless bringing with them new
ideas.   Another important phase of transitional
culture, the Campignian, seems (so far as our still
imperfect information permits us to judge) to be an
independent development, parallel with, but not
affiliated to, the Azilian civilisation.   This phase of
civilisation derives its name from Campigny in the
department of Seine-Inférieure, France ; but it
appears probable that it developed originally in
Scandinavia.   In the *Ancylus* settlement at Magle-
mose is the island of Seeland, the shore settlements
of Järavallen in Sweden and of Nöstvet in Norway,
and above all in the *Littorina* shell-heaps of the Danish

coast (commonly called *Kökkenmöddinger* or " kitchen middens ") we may watch the Campignian culture in process of evolution.   It is chiefly distinguished by two stone tools, of types unknown in the preceding Palaeolithic age—an axe with a cutting edge having its two surfaces straight and bevelled, like the edge of a turnscrew (the so-called " kitchen-midden axe ") : and a pick, consisting of a straight bar of stone with a blunt point at both ends (the " Campignian pick").

The shell-mound of Oronsay, which has been excavated with great care by Messrs. A Henderson. Bishop and Ludovic Man,[1] has given us valuable information on the mode of life of that early time.   It belongs to the period of the 25-feet raised beach. Flat harpoons, of the Azilian type, were found on the site.   For the details of the Oronsay discoveries we must refer the reader to the monograph named in the footnote : but the general conclusions may thus be summarised.   Oronsay man, at the time of the deposition of the shell-heap, was a hunter, a fisher, and a fowler.   There is no evidence, such as would be afforded by the presence of corn-grinders and similar implements, that he practised agriculture.   Fragments of red paint, and perforated shells, shewed how he decorated his person ; the pins and piercers of bone indicate that he was clothed in hides.   No human remains were found on Oronsay itself, but some bones came to light in a cave at Oban,[2] which gave a certain amount of information about the physical character of the tribe.   The explorers of the site believe that the ancient inhabitants sailed thither in a *currach* of hides stretched on a frame, rather than in a dug-out canoe, on the ground that no tool fit for making a dug-out was found in the settlement.   However that may be, an indication of their skill in seamanship is the presence in the midden-heaps of the remains of crabs of deep-sea varieties : this shews that the people

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[1] See their report in the *Proceedings* of the Society of Antiquaries of Scotland, xlviii, 52–108. See also *idem*, xxxii, 298.

[2] *Proceedings* Soc. Antiq. Scot., xxix, 211, 410.

had traps, and that they could row out some distance to set them.

Now if there were people in what we now call Scotland, at the time of the 25-feet raised beach, who could row at least six miles in a canoe, however made, they could in calm weather cross the not much wider channel that separates Maol Chinn Tíre from Baile an Chaisleáin, where Scotland and Ireland are plainly in sight of each other.

It is not, however, to be understood from the foregoing paragraphs that the first inhabitants of Ireland, whose remains we find there also in the 25-feet raised beach, were direct colonists from Oronsay or from any analogous settlement.   The two communities belong to different culture-groups.   The Scottish settlements hitherto found (at Oronsay and at Oban) are Azilian in type : the Irish settlements (chief among which are those contained in the Latharna gravels) are distinctly Campignian.   No Campignian remains have as yet been found in Scotland : but the geographical position of the earliest sites in Ireland makes it practically certain that Ireland was colonized from Scotland, at about the same time as the deposition of the Oronsay shell-heap.

The beginning of the Neolithic period was marked by an immigration into Europe of at least one short-headed race, most probably from Asia ; to which race, indeed, Europe has probably to acknowledge its indebtedness for many of the Neolithic arts.   Though this was more likely a gradual " peaceful penetration " than a sudden warlike incursion, the newcomers must have produced a congestion of the population of the Continent.   For Europe, sparsely inhabited though it was, had already as many dwellers as it could conveniently support.   It was still to a large extent uninhabitable, owing to its dense forests ; its natives still lived on the produce of the chase, and therefore needed wide and empty areas for the breeding of the beasts on which they fed.   It is quite probable that a direct result of the congestion, produced by the

immigrants, would be to squeeze the backwash of humanity into places where man had never penetrated before. So it is just at this time that we find communities working gradually northward through England into Scotland, and crossing the western sea to the islands which seemed to offer a refuge.

Some such influence as this—some *force majeure*— must be postulated if we are to account for these colonists seeking new homes at all. If psychologically they at all resembled the primitive men that come under our own notice—and this is at least probable— then only the most irresistible pressure from behind would have induced them to settle in a new country at all. For, to a degree inconceivable to us, the savage is surrounded, day and night, by spiritual terrors of every kind. So long as he stays in his own country, he knows how to propitiate the ghosts and the demons that haunt its every corner. But when he is transported to a strange land, amid strange ghosts and strange demons, he is as one at sea in a rudderless ship. Something of his pitiable state may be gathered from the story in Hebrew history of the tribes with which the Assyrian king had peopled the land of Israel, after deporting the Israelites themselves.[1] The newcomers being decimated by lions, which had bred freely in the depopulated country, sent a message to the king begging him to send them an Israelite priest to instruct them, as " they knew not the manner of the God of the land." Exactly in the same way, though in a yet more intense degree, we may picture the colonists setting foot in trepidation on the shores of Ireland : they knew not the manner of its spiritual inhabitants. Nothing but necessity could have induced them to brave these imaginary but very real terrors. Such a necessity was very likely the result of the intrusion of the short-headed tribes, and the consequent upset in the balance of population in Central Europe.

[1] ii (iv) Kings xvii, 24-41.

Wherever they may have landed, they very soon began to make their way round the coast. They did not at first penetrate inland ; the interior, as has been already indicated, was not inviting. Ireland is girdled round with a ring of midden-heaps. But it is not to be supposed that they all belong to the first inhabitants ; many of them are quite late in date. Indeed, the shore-dwellers' civilisation, if so we may call it, might have been studied in the life within the last hundred years on some of the remote islands along the western coast—save that the moderns enjoyed, in addition to the fare of their remote ancestors, the not wholly unmixed advantage of the potato, and the unmitigated evils of tobacco, strong tea, porter, and *poitin*. Some of the middens of the shore-dwellers have yielded bronze and even iron objects : and one of the most elementary rules of archaeological research is to date deposits by the latest objects which they contain, if there be no proof that these are intrusions. As a rule, the stratification of a site will guide us through the maze in safety, so long as it has not had the misfortune of having been what is technically called " hogged," by treasure-seekers or curiosity-hunters.

IV. In the preceding paragraphs we have already answered to some extent the third of our three questions : the stage of civilisation to which the first inhabitants had already attained. But in order to answer it more completely we must now proceed to give a fuller account of the results that have attended the investigation of the midden-sites.

V. These may be classified under four heads : (i) Raised beach sites. (ii) Shore-dwellers' sites. (iii) Factory sites. (iv) Shell-heaps. The first three types contain implements, belonging to very different stages of civilisation. There are no implements of importance in the fourth type.

VI. As a typical example of the Raised Beach sites, we may begin our account with a study of the gravels at Latharna, to which we have already referred. Most of these gravels have been cleared away for

railway-ballast ; a typical section has been cut out and cased, and is now preserved in the Royal Irish Academy's collection housed in the National Museum. Several accounts of the Latharna gravels have appeared from time to time ; the best is a report presented to the Belfast Naturalists' Field-Club by a committee appointed for the purpose, and printed in their *Proceedings* (II, iii, 198). This committee excavated a section of the gravels, measuring 9ft. by 5ft. in cross-dimensions, to a depth of nearly 30 feet below the surface of the ground ; at this level the influx of water prevented further sinking. The contents of each stratum passed through were carefully analysed. The parts of this analysis relevant to our purpose may here be abstracted.

The Latharna gravels were situated at the base of a spit of sand, called from its curved shape *Corran* (" sickle ") which juts into the water of the harbour. They form a stratified deposit above the estuarine clay, which in its turn rests on the boulder-clay. The boulder-clay is a glacial deposit ; the estuarine clay an important post-glacial deposit. This gives us a definite major limit of date for the implements found on the site. Mr. Knowles, whose many reports on the shore sites published in various Journals must form the basis of any work done upon the subject, has expressed it as his opinion that the Latharna flints are Palaeolithic, or even pre-Palaeolithic :[1] and much has been made of a mammoth-tooth which was found somewhere on the shore in the neighbourhood of the gravels. But Palaeolithic, and still less pre-Palaeolithic, tools cannot be embedded in gravels which were formed over a post-glacial deposit : for this proves that the beach was formed after the close of the ice age, and therefore after the conclusion of the Palaeolithic period. As for the mammoth-tooth, there is no evidence that it had more than an accidental connection with the gravels. It was found lying loose, not set in a definite bed.

[1] PRIA, xvi, 209.

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The following strata were observed by the committee of investigation, in order from bottom to top :—

1. Estuarine clay.

2. Coarse black sand, stained in places with iron, 1 foot thick. No implements.

3. Black clayey gravel. Very few implements : only two found, giving an average of 0.04 to the cubic foot.

4. Thick bed of gravel, of coarse texture, with numerous fossils ; towards the bottom the matrix is red and clayey. 8 feet 6 inches thick. Flakes were found sparingly through this bed, as well as a few cores and one fine celt. The excavators divided this bed into four sections, and found the average number of implements to the cubic foot in these sections to be respectively 0.08, 0.37, 0.34, and 0.31, beginning with the lowest.

5. Alternating bands of fine gravel and sand, 3 feet 6 inches thick. Hardly any implements ; average per cubic foot only 0.013.

6. Two beds of coarse gravel, the pebbles being up to 6 ins. in diameter, with matrix of yellow sand ; the uppermost 18 inches had been disturbed by cultivation. The depth of the upper stratum was 1 ft. 6 ins., of the lower 4 ft. 6 ins. In the upper stratum there were at least 10 implements to the cubic foot ; the lower stratum had about the same proportion at the top, diminishing to nothing at the bottom.

The gravels were apparently deposited by powerful currents at a bar across the mouth of the loch of Latharna. While they were in process of formation human settlers established themselves upon them. The first settlement was very small—perhaps a single canoe-load—and so the implements in the lowest layers are very scanty. As the settlement increased the tools become more frequent. The belts of sand between the layers of gravel seem to indicate temporary fluctuations, involving a sinking of the land-level which inundated the site of the settlement. On this spit of sand the people found the molluscs that supplied their needs, and they were conveniently removed from the inland forests with their dreaded animals.

Mr. Coffey[1] has maintained that the Latharna site was not a dwelling-site, but rather a factory. The arguments in favour of this view are (i) the presence

[1] PRIA, xxv, 182.

of cores in considerable quantities—an observation
that the Belfast Field-Club report, rather remarkably,
contradicts—and (ii) the absence of well-finished
tools and of other traces of human habitation, such
as shell-heaps, ashes, and the like.   His theory is
that people came hither for materials for their tools,
roughed them out on the site, and carried them away
for final trimming at their homes.

Had this been the case, however, we should not
have found so complete a uniformity in the Latharna
tools as we actually do find.   Rough though they be,
the Latharna flints conform to a definite type, com-
parable with the Campignian type of the Continent,
and they can be easily picked out from a pile of
miscellaneous Irish flints.   Had we to deal with a
manufactory, we should have found tools in all stages
of manufacture, and also irregular waste flakes of
every possible shape.   More cogent appears the second
argument : but we do not know that midden-heaps
may not actually exist in some part of the site as yet
undug, or that they may not have been washed away
by the sea, as has happened to whatever shell-heaps
there may have been on the western coast of Denmark.
The subsidiary implements—limpet-scoops and the
like—may here have been of wood, not of bone,
and may therefore have altogether perished.

Other inhabited traces of the 25-feet raised beach
have been found at Ceall Róid, Co. Antrim, and at
Port Ruis, in the same county, where we find a raised
beach in the middle of the town, in addition to the
later settlements of which traces have been found on
the existing beach.[1]

The implements found in these Raised Beach sites
will be more fully described later in this chapter.

VII. A hiatus must be admitted to exist between
the civilisation of the Raised Beaches and that of the
Sandhills.   But as in the case of the hiatus between

[1] W. J. Simpson, *Notes on Worked Flints found on a Raised Beach
at Portrush, in August*, 1882 (PRIA, xvii, p. 76).

the Palaeolithic and the Neolithic periods, the gap
is in our knowledge, not in the course of development.
All that can be said at present is that nothing has as
yet been found to throw light on the stages of history
that intervened in Ireland between the Campignian
settlements of the Raised Beaches and the much later
Neolithic of the earliest shore-dwellers.   There are
two alternative explanations of the hiatus possible.
Either we may suppose a small body of colonists to
have landed at Latharna and at the allied sites, to have
confined themselves to those places, and there left
evidences of their industry—and then from one cause
or another perished utterly, leaving the country un-
inhabited till a later Neolithic colony came and
started afresh : *or* we may suppose the first band to
have developed, by processes as yet hidden from us,
the one civilisation out of the other.   Only future
investigation can determine which of these alternatives
is correct.

If we are to adopt the theory of a continuous popula-
tion, it does not follow that we are to suppose that
there was a continuous development.   For us, to whom
the modern inventions of locomotion are a prime
necessity for travel, it is difficult to realise that there
was no small intercourse between different tribes and
countries at a time when those inventions were un-
dreamt-of : when the only communication by land
was by canoes moving up and down the rivers, or
along tracks trampled down by cattle ; and the only
communication by sea was by hide-covered currachs.
The uniformity with which civilisation advanced over
Europe shews that there must have been free inter-
course   between   its   different   population-groups.
There must have been a first man to make a barbed
arrow-head, let us say ; yet the knowledge of the
invention spread all over Europe.   Even if half-a-
dozen, or fifty, or a thousand different people, in as
many different places, all hit independently on the
same invention, its diffusion is only a degree less
remarkable, when the total absence of writing and the

difficulties of transport are taken into account. In this give-and-take of new inventions, even an over-sea country like Ireland would have its share. If a body of colonists could have rowed over from the nearest points of Great Britain in the beginning, they could have been followed by others at later stages of the Stone Age, bringing with them a knowledge of the later developments of civilisation.

On the whole, the most likely working hypothesis to account for the observed phenomena of Neolithic history in Ireland seems to be as follows. The first people landed while they were still in the Campignian stage of development. They continued for a long time in the country, unprogressive, and confined to the sites in the north-east corner of the country, where alone they could be certain of obtaining flint. When their kinsfolk in the larger island, thanks to their proximity to the Continent, had made progress in material civilisation, later colonies found their way into Ireland and introduced the more developed arts which we find illustrated in the older sandhills. This theory is necessarily tentative, but in the present state of knowledge seems to fit the facts.

VIII. The Shore-dwellers' or Sandhill sites are frequent on the northern shores of Ireland, and appear in lesser numbers elsewhere. When they were deposited the land had attained the level at which it at present stands. The squatters on the sands built them rude huts of stone, round which they heaped the remains of their feasts. They made their implements of flint where they could get it, but, failing flint, of whatever other stone came in their way.

The typical sandhill site is at Whitepark Bay, at the eastern end of the Giants' Causeway. It has long been known as a productive source of antiquities, and has in consequence been systematically " hogged " by tourists, collectors, and dealers' agents, so that by now its glory is sadly diminished. Here and elsewhere the loose sands of the dunes are ever shifting in the winds. When an eddy of wind blows away the sand

from a spot in the dunes, it makes a hollow, sometimes
as much as fifty feet in depth.   In the side of this
hollow is to be seen a black stratum.   This is the old
shore level, and here are contained the relics left
behind by the old inhabitants.   It is much more
compact than the loose sand which covers it, so that
it is less liable to denudation by the wind ; but it is
not altogether proof against violent blasts, and when
the sand-particles of the floor-level blow away, the
implements drop through to the bottom of the pit,
where they accumulate.   Where there has been a
hearth-site, made of flat stones, the layer of stones
composing the hearth protects the sand underneath
it from disturbance ; thus there is apt to be a small
mound formed in the middle of the pit, capped by
the layer of flat stones.   The hearths are identified
as such by the burnt condition of the stones composing
them, and by the accumulation of ashes above, around,
and under them.   The ashes of fires blown about,
and the decomposition of organic matter, has caused
the black colour of the old surface, which is almost
a constant feature of the Sandhill sites.[1]

As illustrating the former wealth of Whitepark
Bay, I may borrow the following particulars from a
paper by Mr. Knowles.[2]   A space on the old surface
measuring 80 square feet was marked out, and its
contents catalogued.   It contained :

  2 poorly-made arrow-heads.
 21 scrapers.
 44 cores.
277 flakes.
 13 hammer-stones.
 A few pieces of haematite, scraped and rubbed.
 14 pieces of plain pottery.
  4 pieces of ornamental pottery.
 A coarse implement of deer's horn, rudely pointed.
 A quantity of bones, teeth, and shells.

[1] This description is founded on the account given by Mr.
Knowles, in JAI, ix, 321.
[2] PRIA, xvii, 617.

Specimen sections of the implement-bearing sand are cased and exhibited in the museums of Dublin and of Belfast.

Though these sites are certainly Neolithic in origin, it does not necessarily follow that all the sites of this nature are so ancient. The absence of metal does not by any means prove a stone-age date for any site. A stone tool, judiciously sharpened, may be the cheapest and even the most effective tool at any time for such a purpose as the extraction of a mollusc from its shell. Pottery has been found at Whitepark Bay and elsewhere indistinguishable from bronze-age and even iron-age pottery. The investigation of a site of the kind requires to be carried out with care and judgment, and the conclusions should not be stated with an over-confident dogmatism.

The stone used for the implements found in the Sandhill sites is always the stone found locally. This naturally is flint in places where flint is procurable. At Whitepark Bay there is an abundance of good flint, which is the reason why that site is, or was, so rich in well-fashioned implements. On the western coast where flint does not occur naturally, as for instance in Counties Mayo, Galway, and Clare, the local stones are used. As these are often not really suitable for making tools, the implements are not infrequently so rude and formless that they would scarcely be recognised as human workmanship at all, unless the finder has had a previous acquaintance with the types at which the manufacturers were aiming.

Among the tools and the ornaments of stone and of bone, are scattered the shells and bones remaining from the feasts of the shore-dwellers. The animals represented are ox (*Bos longifrons*), sheep, goat, pig, fox, wolf, and red deer. At Cuan Bhaile Lugha, in Co. Down, bones of the Irish elk have been found in the ancient layer[1] : and we have already referred to the bear's tooth found at Cuan Trágha Lí. The

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[1] UJA, II, iv, 44. The volume of bibliography will include a detailed list of shore-dwellers' sites, where references will be found.

long bones are usually split to extract the marrow.
The birds represented are great auk (at Whitepark
Bay and in an iron-age site at Whitechurch in Co.
Waterford), goose, gull, and a few others. Fish-bones
have seldom been noted, but this is most likely due to
careless observation or to imperfect recording : fish-
bones are insignificant and perishable things, and might
easily escape notice.   We can scarcely believe that
such omnivorous people as the shore-dwellers neglected
fish in providing for their larders.   Cod bones were
found at Whitepark Bay, and if looked for they would
doubtless be found elsewhere.   On the other hand,
shell-fish was evidently the staple diet.   Everywhere
there are to be found piles of shells, principally oyster,
mussel, periwinkle, cockle, scallop, and whelk.   Some-
times the shells found are such as would not now
naturally occur on the site.   At Baile na nEas, Co.
Donegal, oyster shells appear in the middens, though
the oyster is no longer found locally.   At Ros na
Beinne in the same county a shell of *Venus verrucosa*
was found, a species not now living in the seas of
Ireland.[1]

The dog-whelk has been found in various sites,
and has been made the subject of much curious specu-
lation as to whether it was used for food, or as a
source of supply of " Tyrian purple."   It is unlikely
that the shore-dwellers troubled their heads about
purple dye : the quotations from Irish historical
romances about the gorgeous robes of kings and others
that have been brought forward are inept, shewing a
want of the sense of historical perspective.   We cannot
argue from the historic, or the semi-historic, to the pre-
historic, in such a free-and-easy way : a simple canon
of archaeological research, often forgotten with fatal
results by those who draw parallels between Irish
literature and Irish antiquities.   This was the rock
on which O'Curry was shipwrecked, and many after
him have met the same fate.   Of course if in eating

[1] PRIA, xix, 656.

a dog-whelk the feaster found himself besmeared with the dye, he would be as delighted as a small boy of modern times when he discovers that his person displays the traces of indulgence in fresh walnuts. I am not troubled by the fact that the dog-whelk is not now supposed to be fit for food.   Mr. Knowles tells a story which he heard in Co. Donegal, about certain shipwrecked French sailors who would eat nothing but this despised mollusc.[1]   The story is hardly needed to corroborate the principle that primitive man will eat anything he can bite, so long as it is not actively poisonous, or hedged round by a religious or a social *tabu ;* but it is as well, perhaps, that the incident should have been put on record.   Another point worth notice is that in the Irish midden-heaps the whelk-shells are, when broken, smashed in pieces, as though they had been crushed by a blow between stones.   The shells in the enormous heaps which I have had an opportunity of examining on the sea-shore at Tyre, doubtless the relics of the purple industry which made that ancient city famous, shew a different treatment : they are all perforated, as with a sharp-pointed instrument, in the neighbourhood of the sac containing the colouring fluid.   By the rough-and-ready method of the Irish deposits the dye would have been lost.   Besides, the amount of colouring matter secreted by each mollusc is so small, that the quantity of the shells would need to be much greater in proportion than it actually is to justify us in supposing that they were collected for the purpose of extracting the dye.

The sea-shells are sometimes mixed together, but often the different species are kept apart—mussels here, whelks there, periwinkles elsewhere.   This means that large quantities of each species were collected at once, and eaten in a single feast.

Thus we gather a picture of a series of communities living along the shore, and spreading gradually round the whole of Ireland.   They had a fairly uniform

[1] PRIA, xxi, 437.

civilisation, though there was little mutual inter-
course—otherwise a trade in flint would doubtless
have developed.   They lived on the produce of the
sea, as well as on trapped animals and birds.   They
cultivated grain, and ground it between rubbing-
stones.   They stained themselves with ochre, but
their claim to a use of " Tyrian purple " is, to say
the least, non-proven.

Their gradual penetration inland, up the rivers
which afforded an easy highway into the interior of
the country, is illustrated by a site found near Ormeau
Bridge in Belfast.[1]   In sand deposit on the banks of
the Lagán were found a flake apparently trimmed
for putting on a shaft, a hollow scraper, and a very
irregularly made polished axe-head, as well as a large
number of flakes and small cores, scrapers with
rounded ends, a knife, and a leaf-shaped arrow-head.
This site was of especial interest in that it overlay a
Raised Beach site, representing the older phase in
Neolithic culture.   It contained flakes, cores, a chipped
pick, and a bone of a red deer.

IX. Factory-sites are identified by the absence of
hearths, bones, shells, and other kitchen refuse which
mark the ordinary dwelling-sites ; and by the presence
of tools at different stages of manufacture—some
merely roughed out, others more or less complete.
These sites are of importance in archaeological study,
as they illustrate the processes of manufacture of the
various kinds of stone implement.

Several sites of manufactories of stone axes have
been found by Mr. Knowles in the valleys near
Gleann Arma, Co. Antrim.[2]   They yielded cores,
hammer-stones, scrapers, and flakes, as well as picks
and other stone tools.   Except these tools, there were
no other traces of human occupation.   The great
number of the stone objects will be realised from the
fact that from two sites in this district Mr. Knowles

[1] Described in UJA, II, v, 5.
[2] PRIA, xvii, 619 ; BNFC, 1905, p. 421.

collected over 2,500 axes, of which 2,262 were chipped and 240 were ground.   Another factory site has been found at Fisher Street, Co. Clare.[1]   One good hammer-stone was found here, as well as celts at all stages of manufacture.

X. The fourth class of shore sites, which I have here called shell-heaps, are, in Ireland, distinguished from the other sites by the total absence of anything but shells.   There are no huts, no hearths—except a few traces of fires which appear to have been kindled directly upon the piles of shells already accumulated— and no implements, except rude wedges of stone that could have been used for forcing open bivalve mol-luscs, or for scooping them out of their shells.   This absence of implements shews that these shell-heaps were not places of permanent abode : and the absence of datable objects makes it impossible to assign them to any definite period.   Rather are they to be regarded as places whither people came to collect shellfish for consumption elsewhere : and they are not necessarily of any great antiquity.   Indeed there is at least one, at Inis, Co. Kerry, which is still in process of forma-tion.   Unshelled molluscs are hawked about the western towns of Ireland, especially on Fridays, and it is most probable that these heaps are the remains of this humble industry.   That the fishers themselves indulged from time to time in a banquet on the spot would be no more than natural, and thus the traces of fire remaining here and there in the heaps are easily accounted for.   The shellfish may have been cooked for sale, as well as being shelled, upon the site where they were collected.

XI. By the end of the Stone Age, man had found his way over the whole of Ireland, in spite of the difficulties in his way.   This is shown, *inter alia*, by the distribution of the dolmens, of which we shall speak in the proper place, in a later chapter.   But the inland sites, by which his progress might be traced,

[1] PRIA, xxii, 355, 388.

are very little known, and what has been published has been very imperfectly described.

As an example of cave sites, we may take that of Baile na mBaintreabhach, in Co. Waterford, between Dún Garbháin and Ceapach.[1]   There are here a number of caves in the limestone cliffs : and that mentioned was explored in 1879, with results which may be here summarised.

1. The cave was in the first instance formed by the action of an underground stream, which deposited gravel on the floor. There were no bones in this gravel.

2. The stream dried up, apparently gradually and with intermissions. A bed of stalagmite then formed over the alluvial gravel. This stalagmite in places attained a thickness of 3 feet 6 inches. At 24 feet from the entrance it came to within 6 inches of the cave roof, thereby blocking the interior recesses of the cave to all animals larger than a fox. Accordingly no animal remains were found in the cave beyond this point.

While the stalagmite was being formed, bears made their abode in the cave. The bones of deer were also found ; these had probably been dragged in by the bears. The only other animal represented at this period was the frog.

3. Water washed into the cave and gradually removed some of the underlying gravel. The stalagmite layer, thus deprived of its support, became broken up. A pale sandy earth, apparently decomposed Old Red Sandstone, was washed in by the water, and in the layer of this material the fragments of the stalagmite floor became embedded.

Bones of bears and of hares (numerous), pig (few), and rabbit, deer, wolf, ox, and elk (one each) were found in this layer. Most of them had probably sunk down from the stratum next above.

One human finger-bone was said by the workmen to have been found in this layer, but it also appeared to belong to the stratum above.

No implements ; some charcoal, washed through crevices from the upper stratum.

4. Over the sandy soil a layer of grey earth was gradually accumulated by water action. Seams of calc tufa occurred at intervals through this stratum.

Bones were found of Irish elk, bear, hare, ox, red deer, pig, rabbit, goat, fox, wolf, badger, marten.

Twelve fragments of human bones were also found. These bones belonged to the stratum.

[1] *Scientific Transactions*, Royal Dublin Society, New Series, i (1877–1883), p. 177.

Charcoal was abundant, forming a seam like a hearth or an old floor. The artificially pointed bone of a goat was found, as well as many rude hammer-stones of sandstone.

The Irish elk bones were broken for the marrow, and there was an undue proportion of leg bones. This shewed that the human occupants of the cave hunted the elk, cutting it up where they killed it, and carrying into the cave the eatable portions of the carcase : a clear proof that the Irish elk and man were contemporary in Ireland.

5. A stratum of brown earth formed over the grey earth, also washed in by water. The stream had for some reason ceased to be charged with carbonate of lime, which was the cause of the change of colour of the earth.

Bones were found of rabbit, hare, goat, ox, fox, pig, red deer, dog, marten, horse, hedgehog, and a bear, the last-named probably dug up from a lower stratum. It will be noticed that the elk has now disappeared.

Nineteen fragments of human bones were found.

A polished celt, a bone piercer, a perforated bone, a bone needle, two fragments of pottery, and a few hammer-stones, which were found in this stratum, were enough to date it to the latter part of the Neolithic period. The stratification of the implements was quite clear : the only disturbances were a chisel of bone, and a very late knife-handle (said to belong to about the sixth century A.D.). These were accidentally washed down into stratum 4 through a drainage crevice.

6. The accumulation of the earth of stratum 5 continued until the piled-up material came too near to the roof to allow of the cave continuing as a habitation, and so it was at last abandoned.

XII. These results speak for themselves. I have thought them worth setting forth thus at length as a good example of how a careful excavation can teach us the whole history of a site. We can see the gradual improvement in tools, the disappearance of certain animals, the entrance of others on the stage : in short, the whole drama of life can be followed, by minute observance of the stratification of such a bed of accumulation as this. It cannot be expressed too strongly that it is a fatal error to suppose that excavations of this kind are conducted for the purpose of finding *things*. The objective is *facts*. The actual money value of the objects found in this cave, even with the ridiculously inflated prices which dealers set upon

antiquities nowadays, was very small.   But owing to the care with which the excavation was carried out, they acquired a scientific value beyond all price.

Too many sites of the kind have been dug with the mere purpose of finding loot.   The stratification has been neglected, and the result has been like a book of which the leaves have all been torn out and mixed up ; indeed, it has been worse, for the leaves preserve a sufficient number of clues to enable us to sort them, but prehistoric strata once mixed up cannot with certainty be completely restored.   But even when the stratification has been noted it must be critically studied : otherwise it can be misleading.   A good example of its dangers may be seen in some observations and deductions made by Rev. J. O'Laverty, regarding antiquities found in the Banna at Port Gleanna Eoin.[1]   I do not quote this to disparage the writer or his work.   On the contrary, he displays an instinct for scientific observation that we seek in vain in many others.   And it would not be fair to find fault with an author, writing so long ago as 1857, for not knowing facts that have become common property since then.   But the illustration is so good, as showing how a careful observer may be led astray in his deductions, that I cannot forbear quoting it.

The river had been partly diverted in order to deepen it ; and it was found that its bed was principally of a whitish clay, over which was a layer of sand and small stones, ranging in depth from 6 to 14 inches, and containing many antiquities.

At the bottom were arrow-heads of light grey flint, barbed and lozenge-shaped, the latter being the commoner : a fragment of bronze, apparently part of a javelin-head or a knife-blade : and a grey flint celt.

In the middle were bronze swords, daggers, and a bronze scabbard, as well as many bronze spear-heads, some of them still retaining part of their wooden handles.

At the top were black polished celts, and what the author calls rude spear-heads (he should have said javelin-heads) of reddish coloured flint.

[1] UJA, I, v, 122.

The author of the paper concluded that the top objects were the latest, the swords, etc., being older, and the arrow-heads older still. The flaw in his reasoning was that he neglected to allow for the flow of the river. We now know from hundreds of finds that swords and spear-heads are a late development of the Bronze Age ; the middle stratum is therefore in this case the latest. The arrow-heads in the bottom stratum might be as late as these, the smaller objects having dropped through crevices between stones, which would prevent the larger objects from following them. The celts and rude flints, so far from being the latest, were the earliest objects from the site. Assuming the accuracy of the statement that they were on top—we do not know whether the writer spoke from his own observation or from information supplied by the workmen—these must have washed down the river from some site higher up its course.[1]

We may now proceed to describe the tools and implements left behind by the people of the Neolithic period in Ireland. Naturally we begin with the objects in flint and other stones, which are the most important and typical remains of the handiwork of Neolithic man.

XIII. Flint is a siliceous concretion formed in favourable circumstances round sponges or other organic nuclei, and found in layers embedded in the chalk cliffs which are the results of submarine deposition. There is reason to believe that large areas of Ireland was once covered with chalk, having seams of

[1] Sometimes there are disconcerting incongruities to be found in archaeological deposits. Thus at Ros Ercain, Co. Antrim, an urn of the Bronze Age was found inverted over a cremated interment: in the deposit under the urn was a small seventeenth-century glass bottle [JRSAI, xxi, 433 ff]. The explanation of the intrusion is probably that given by the Rev. G. R. Buick in describing the find—that it had been disturbed in an age when the belief in fairies and other uncanny influences was stronger than it is now, and that the discoverer had replaced it reverently, with a bottle of holy water to avert any possible harm from himself.

flint running through it ;[1] but except in one place this has all been denuded out of existence by atmospheric action, leaving no trace but occasional flint nodules lying on the surface of the ground.   That one place is the north-east corner of the island, where a thick bed of basalt overlies the chalk—as may be seen, for example, by visitors to Port Ruis.   On the shore between the town of Port Ruis and the Giants' Causeway the sea has had its will of the chalk, and has cut it into all sorts of fantastic forms.   But above, the thick " blanket " of basalt protects the soft rock lying underneath, and thus it is only on the vertical face of the cliff that denudation can take place.

Here flint is found in inexhaustible quantities. There is a great accumulation of nodules under the basalt, showing that surface denudation had gone on to a considerable extent before the basalt had spread over the cliffs to protect what was left of them.   These nodules were once deposited in layers, in an upper part of the cliff which had been weathered away before the time of the basalt.   As the process of denudation advances, the nodules become more and more exposed, and finally drop out from the face of the cliff to the foot, where there is a great accumulation.   Good flint was thus to be had for the picking up, and did not need to be mined for, as was the case in other countries.

Where flint is not to be found, the Neolithic people were forced to use whatever stones they could get as substitutes.   Chief of these was chert.   Chert is in origin similar to flint, and resembles it in appearance, but is less glossy ; it is more brittle than flint, and does not break with so clean a fracture.   It is distributed fairly widely over Ireland, and makes a tolerable substitute for flint whenever the latter stone is not available.

But other stones, even less satisfactory, were pressed into the service.   It is clear that those who were com-

[1] PRIA, xxx, B, pp. 12, 13.

pelled by their geographical position to be content
with these less tractable stones endeavoured to copy
the forms of implements which had evolved naturally
from the use of flint—though this was a feat difficult,
if not impossible, to accomplish satisfactorily.   This
indicates that the dwellers in the less favoured parts,
where flint is absent or only to be found in occasional
loose nodules, had originally come from a flint-bearing
region ; that the first landing had been effected in
the north-east corner of the country, and that as the
population increased they gradually spread further
round the coast, as well as inland.

XIV. The development of civilisation during the
Neolithic period is marked, in all countries, first by
a growth of technical skill on the making of the tools,
and then by a growth of specialisation.   Technical
skill may, it is true, co-exist with a low stage of culture,
as is shown by the artistic and ingenious handiworks
of South Sea Islanders to be seen in any ethnological
museum.   Specialisation is a better indication of the
stage of material culture attained by a community,
whether we consider the man himself or his tools.
The primitive savage has to be his own hunter, butcher,
skinner, cook, tailor, builder, law-giver, medicine-
man, soldier, sailor, and undertaker.   The functions
of law-giver and of medicine-man early separate
themselves from the rest, and become the privileges
of certain individuals ; but the growth of specialisa-
tion in the other crafts is gradual, and we may measure
the scale of civilisation according as it is developed.
The same is true of the tools of man.   He begins with
the " universal flake " or chopper, which serves all
purposes.   The flake of early Neolithic man is to the
tools of later Neolithic man what the schoolboy's
pocket-knife is to the tools that a grown man needs
for his work.   The schoolboy fashions a toy boat,
pares his pencil, trims his nails, opens the pages of
uncut books, and indulges in surreptitious dormitory
suppers with the one tool.   The grown man needs a
whole armoury of tools for boat-building, and uses

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a pencil-sharpener, a nail-scissors, a paper-cutter, and a dinner-knife for the other purposes named.

We can divide the Neolithic culture in Ireland into three stages, which we may term the Raised Beach stage, the Sandhill stage, and the Overlap stage—the last being so named because it falls into the period of transition between the Age of Stone and the Age of Bronze.

XV. The tools and implements of the Raised Beach stage are few in number. No bone implement or pottery has been as yet found in any of the Raised Beach sites. The only tools to be described are therefore flints. The flints of Latharna and allied sites have been very fully described and illustrated by Mr. Coffey,[1] and the following account of them is to a very large extent based upon his work.

Cores. These are the waste hearts of the nodules of flint, remaining after the serviceable flakes have been struck off. The Belfast Field-Club committee failed to find many cores in their researches, though from other accounts there seems to have been a large supply available, at all depths where worked flints were to be found at all. Cores are irregular lumps of flint, usually roughly spherical or cylindrical, displaying all round the facets remaining after the flakes required had been struck off. They measure from 3 to 5 inches in length.

Flakes. A Flake is a splinter of flint that has been chipped from the parent block by human agency. When the fracture is due to natural causes other terms, such as *spall* or *chip*, are to be preferred. The nature of flint is such that a sharp tap dislodges a flake from the nodule with a break almost as smooth and as clean as the surface of a sheet of glass—it is this character that makes flint so conspicuously suitable for making implements. A flake that has been artificially struck off displays peculiarities that are not shared by splinters naturally broken. One of the peculiarities is

[1] PRIA, xxv, C 172.

the *bulb of percussion*.   If flint were malleable, like
a lump of lead, the blow would produce a dent on
the surface.   It is, however, slightly elastic, and so
the point at which the hammer strikes the surface is
driven into the flint, and the particles affected directly
or indirectly by the blow are condensed more tightly
together.   These condensed particles cleave away
from those which are left undisturbed; and as the
influence of the blow spreads out as a cone through
the body of the flint, the surface of the fracture is
massed as a lump just under the point where the blow
was struck.[1]   If the blow be struck in the middle of
the nodule, the lump will take the form of a perfect
cone : if the blow fall near the edge, the cone will
not be so perfect ; for the flake, unsupported by the
thickness of the nodule, will break off before the cone
is completed.   There will, however, be a lump or
protuberance on the flake just under where the impact
of the hammer has taken place.   This lump, which
is called the *bulb of percussion*, is one of the chief
indications by which an artificial flake is distinguished
from a natural spall : and the diagnosis is corrobo-
rated if the reversed impressions of similar conchoids
appear in the subordinate facets, the places where
splinters have been struck off to trim the tool to its
final shape.   But it should be said that it is impossible
to give hard-and-fast rules for distinguishing between
artificial flakes and natural chips.   There is no absolute
criterion : nothing but long experience will develop
an instinct for telling the true from the false ; and it
may even be questioned whether the longest experience
can guarantee such an instinct to be absolutely in-
fallible in every case that may arise.

The Latharna flakes present peculiarities that dis-
tinguish them from those found in the Sandhill sites.
They are as a rule rectangular, or of a long narrow
oval shape, between 3 and 4 inches in length.   Broader

[1] This description of the formation of the bulb of percussion is
adapted from Sir J. Evans, *Ancient Stone Implements*, p. 274.

flakes, of a squarer form, are also found, and, in the surface deposits, some very neatly made flakes were found, pointed at one end. On the whole, the flakes of the Raised Beach sites are coarser than are those of the Sandhills. Mr. Coffey remarks on a large number which are of a wedge shape, with the bulb of percussion in the narrow end, the opposite end being broad and thick, and often bearing a portion of the outer calcareous crust of the nodule.

"*Celts.*" The Latharna celt, inaccurately so-called, differs essentially from the latter celt, described below. It is a bar of flint, 6 to 7 inches in length, rudely chipped, and brought to a blunt point at both ends. Having no cutting edge, it cannot properly be described as a celt, if that objectionable word is to be retained at all. On the other hand, there is too much uniformity in the type to allow us to regard it as a mere " blank," that is, a roughed-out tool to be afterwards shaped into a celt. The tool is really a pick ; and it is identical with the Campignian pick of France and elsewhere. This shews us to which of the transitional forms of culture we are to assign the Irish Raised Beach remains.

Chisel-axes. This identification of the Raised Beach sites as Campignian would lead us to expect to find chisel-axes of the kökkenmödding type in the remains of Raised Beach settlements. Such are, however, comparatively rare in Ireland, and they are not to any degree so characteristic of the Campignian phase of civilisation in this country as are the picks. A few, however, have been described, such as those from Port Ruis described by Mr. Knowles, of which three are here shown.

Flints of these early types have also been found at some of the Sandhill sites—notably at Portstewart and at Whitepark Bay. They are distinguished from the later flints partly by their form, and partly by their patination. Patination is a colouring that flint assumes, derived from the soil in which it is embedded. Certain ingredients of the soil, such as manganese

or iron, penetrate into the surface of the flint and stain it ; the result naturally varies with the nature of the soil and with the disintegrating influences to which the flint has been exposed.   This process always requires a considerable time to effect.   Flint that has long
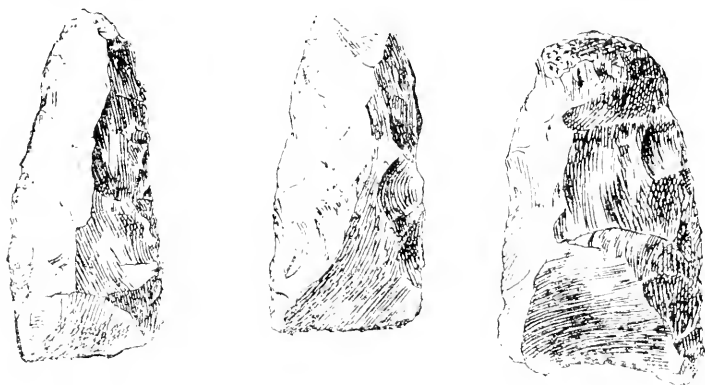
FIG. 3—CAMPIGNIAN CHISEL AXES FROM PORT RUIS

lain exposed to the air, and thus has not been embedded in soil capable of colouring it, is deprived of its natural colour by the disintegrating influence of the atmosphere, and assumes a creamy porcelain-like appearance. This is the case of the Latharna flints, especially those from the uppermost stratum of the Raised Beach.

The early flints found at Whitepark Bay and at Portstewart are very deeply patinated, whereas the later flints are often not patinated at all.   This does not mean that when the later flints were made the earlier were already of a greater antiquity than the later flints are now ; such a deduction, though obvious and attractive, is by no means inevitable.   It rather means that between the times when the old and the new flints were made the former were lying in a bed favourable to patination.   It is not infrequently found that the later inhabitants have picked up one of the earlier flints, and have retouched it to make it serve their purpose.   When this is the case, the older patin-

ation will naturally appear on the original surface of the implement, and will be removed from the place where the later people have removed flakes.

XVI. We now turn to the series of types from the Sandhills.

Cores. These, as before, are the waste products, the hearts of the original nodules thrown away after the serviceable flakes have been struck off (fig. 4). Where flint does not naturally occur, the cores are much smaller ; and the further we go from the regular sources of supply the smaller do they become, till at last they disappear altogether.   Somewhere about
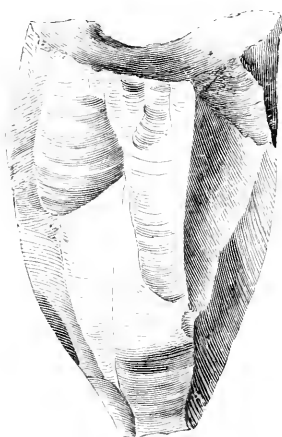
Fig. 4—Flint Core

Provenance unknown, in Royal Irish Academy's collection.

the mouth of the Bóinn on the east coast, and of the Banna on the north coast, are points that mark the limits of the area in which waste cores are to be found. Outside that area flint was too valuable to be thrown away, and the smallest scrap was utilised in one way or another.

Flakes. To classify flint flakes completely is a practical impossibility, and it may be questioned whether it is desirable to attempt to do so.   There

are a large number of intermediate forms between every two varieties, on any system that might be adopted, and these prevent our distributing the specimens into hard-and-fast compartments. Some flakes by their shape are suitable for use as knives, others as javelin-heads, others again as scrapers ; but we cannot always say with certainty that such were actually the purposes for which they were made and used. A typical flake, with the several parts indicated, is shewn in fig. 5.
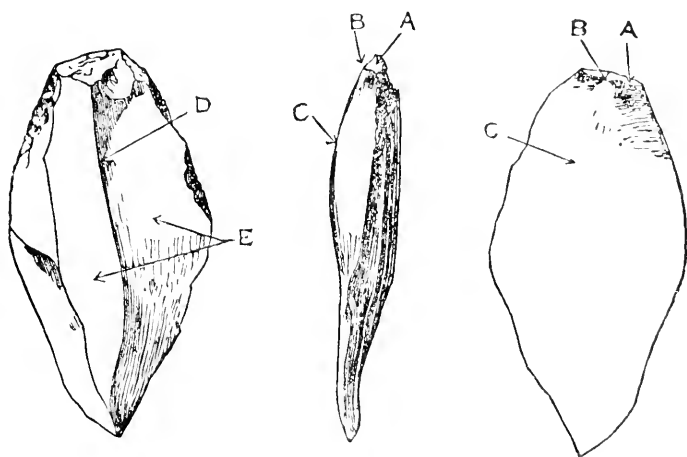
FIG. 5—SPECIMEN OF A FLINT FLAKE

A, the Striking-plane ; B, the Bulb of Percussion, with C, its Conchoid ; D, the ridge separating the facets E.

Generally, however, it may be said that the flake implements found in Ireland are triangular in shape— the triangle not being necessarily isosceles or even rectilinear, though more or less approximating to that shape. On the one face is the smooth inner surface of the flake, the side which was in contact with the parent nodule, with the bulb of percussion. On the other faces the removal of two or sometimes three principal flakes has brought the instrument to the desired shape. The butt is trimmed by means of

what is known as secondary chipping—a delicate subordinate flaking by which the instrument receives a final form. Sometimes this secondary chipping of the butt is so contrived as to give it the shape of an incipient tang.

That such a flake, with a suitable mounting, could be used for a knife, a dagger, or a javelin-point, is obvious. But in the absence of the mounting, which has in practically every case decayed away, it is impossible to do more than guess the purpose for which the last may have been used. There is one flake in existence round the butt of which is wrapped a wad of moss that served as a handle : this object, preserved by some wonderful chance, was found in the river Banna, and is now in the R.I.A. collection (fig. 6).
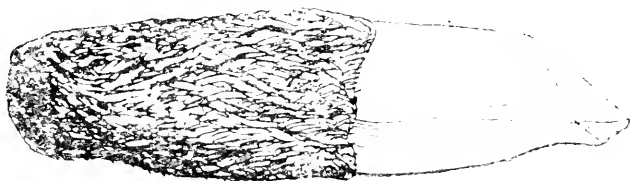
FIG. 6—FLINT FLAKE WITH HANDLE OF MOSS

Awls and Borers. In a variety of this form of tool the secondary chipping is applied to the tip and edges of the flake, in such a way as to produce what was probably a boring tool (fig. 6). A large number
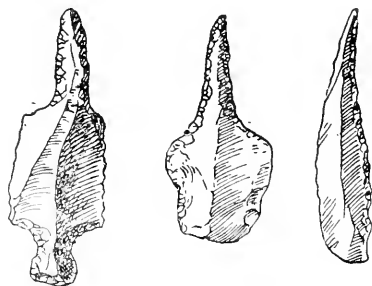
FIG. 7—FLINT BORERS FOUND IN OR NEAR THE RIVER BANNA

of borers, of very small size, have been yielded by
the shore settlements of Grainnse Mór, Co. Donegal.

Scrapers. Scrapers are a further adaptation of
flakes, with or without a pointed tip. In these tools
the edge is trimmed by secondary chipping, sometimes
at the end (end-scrapers), sometimes at the side (side-
scrapers) of the implement : sometimes the chipping
is to be seen round the whole periphery of the flake.
There is, indeed, a great variety of scrapers, under
which general term it is possible that a number of
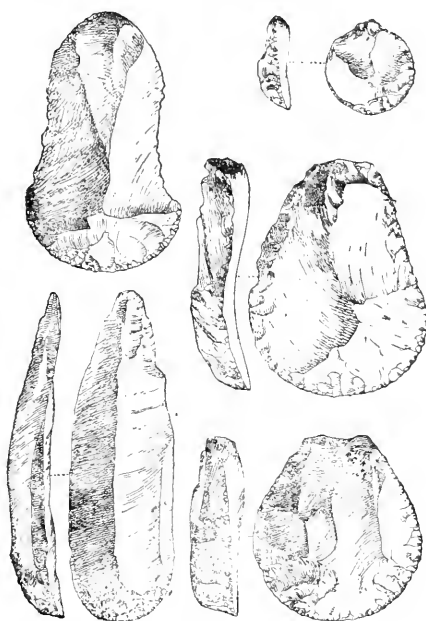
FIG. 8—SCRAPERS

tools with different purposes are grouped—chief
among which would be the cleaning and dressing of
the hides of animals for making garments (fig. 8). Mr.
Knowles has calculated that scrapers form about 60
or 70 per cent. of the implements found at the Sand-
hills : if anything this is an under-estimate. Some

of these tools are mere flakes, while others are very
carefully manufactured, with long or short scraping
edges formed by slight secondary chipping.   Some
have tang-like handles, others have broad blunt blades.
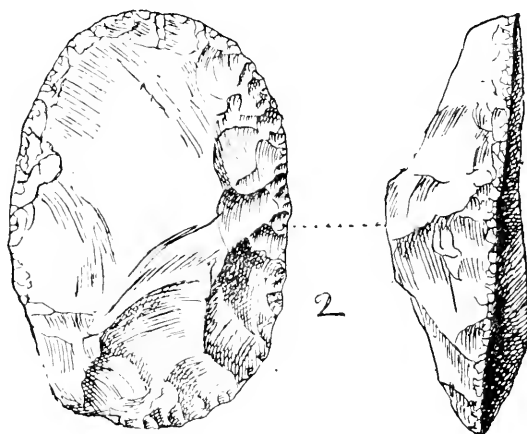
FIG. 8A—SCRAPERS

In dealing with rude tools of this nature it is pos-
sible, as in the case of flakes, to overdo minuteness
of classification, without any compensating advantage.
Though there may be a variety of implements classed
together under the one name " scraper," it is hardly
possible for us to separate them without risk of error.
Many   descriptive   names—" horse-shoe   scraper,"
"duck-bill," "kite-shaped," "circular," and the like—
have been devised, but are of very little practical
value.   One name, however, may be retained with
advantage,   " spoon-shaped   scraper,"   denoting   a
specific variety, of which a number of specimens have
been found.   In this the scraping edge is formed
wholly or partly around an approximately circular
disc of flint, from which a handle-like appendage
projects (fig. 9).
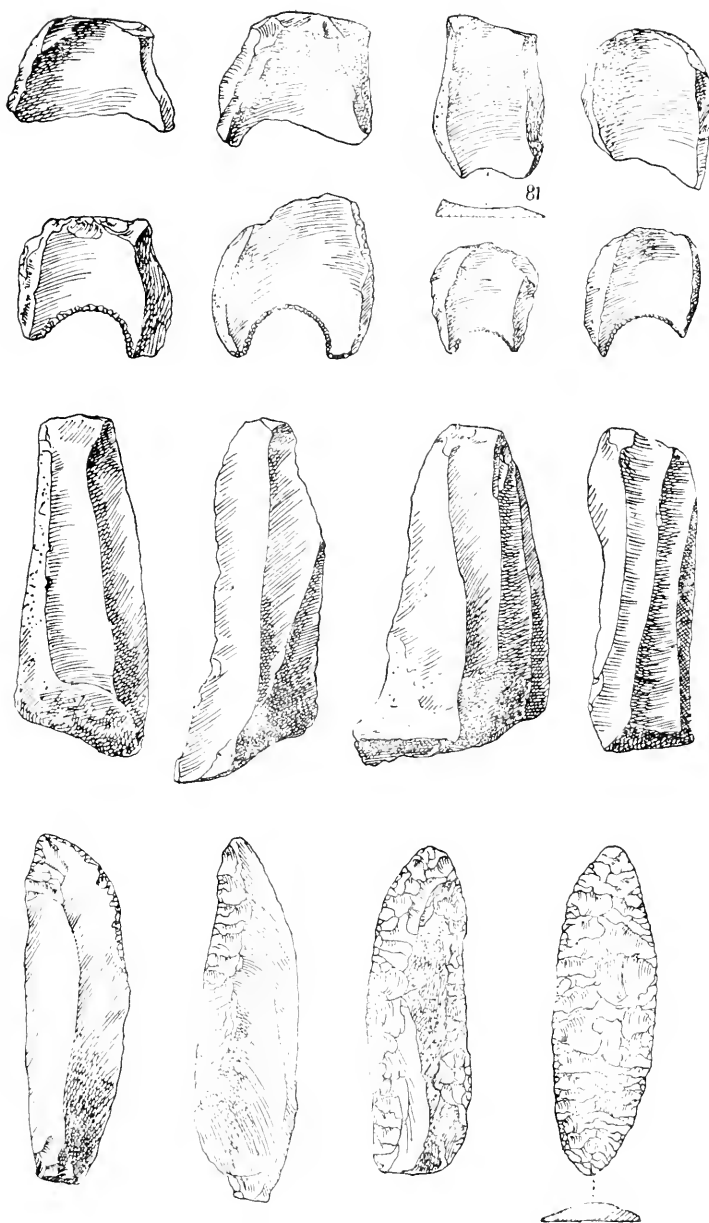
FIG. 8B.—SCRAPERS AND HOLLOW SCRAPERS

Hollow scrapers are found in some, but not in all, of the Sandhill sites : they are absent from some that are rich in other forms of implement. The peculiarity distinguishing this type is a semi-circular notch in the edge. Some writers call these implements " saws," and have shewn that bones can be cut with them when used after the manner of saws. But, on the
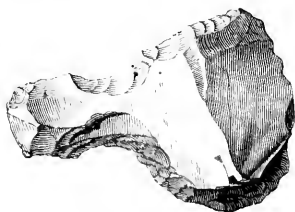
FIG. 9—SPOON-SHAPED SCRAPER

whole, a non-committal name is preferable. A more probable theory of their use, in the opinion of the present writer, is that they were for planing smooth the shafts of arrows or of javelins, or similar curved surfaces. Some examples will be seen in fig. 8B

Mr. Knowles has figured a scraper[1] which, he considers, combines in one tool a straight edged and a hollow scraper together. To judge from the illustration, however, the hollow is hardly deep enough.

Knives. By chipping away one edge of a flake, and leaving the other, either intact or touched up with secondary chipping, a knife is produced. This form (the *couteau à dos rabattu* of French archaeologists) is not infrequent in Ireland.

Saws. A further modification—denticulating the cutting edge of a knife of the type just described—produces a saw (fig. 10).

Daggers. Among the finest implements in flint found in Europe are the beautifully made daggers, with handle and blade complete, chipped out of a single flint nodule, characteristic of Scandinavia. It is highly improbable that these weapons are older than the Bronze Age : indeed they have all the

[1] PRIA, xvii, 182 and accompanying plate.

appearance of being an attempt to imitate, in the less tractable flint, the beauty and finish of an implement in bronze.   Nothing comparable with the excellence of these weapons has been found in Ireland, but
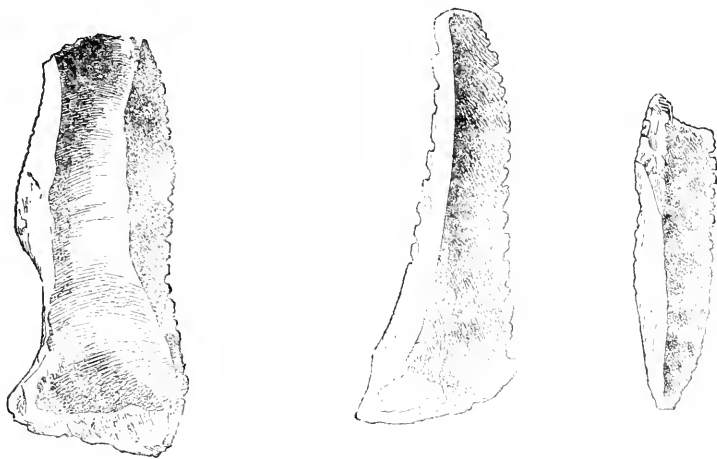
FIG. 10—FLINT SAWS

objects designed on the same principle are not unknown. Such are a dagger (fig 11) in the Royal Irish Academy collection (provenance unknown) : and another, more nearly resembling the Scandinavian type
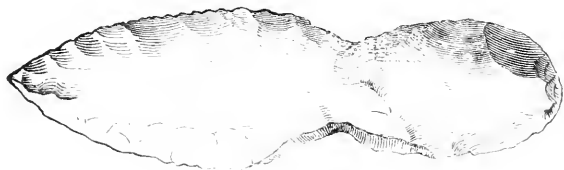
FIG. 11—FLINT DAGGER

but of inferior technique, found in the bed of a dried lake at Scairbh, Co. Clare.[1]   It is described as being $1\frac{3}{4}$ inches across at the widest part of the blade, and $5\frac{1}{2}$ inches long. The top is slightly broken (fig. 11A).

[1] R. Day, *Danish Spear-head* [*sic*]. JRSAI, xxv, 176.   The writer of this note seems to have had no doubt of the Danish origin of the object, and offers some strangely anachronistic theories as to how it may have found its way to Ireland.

FIG. 11A—FLINT DAGGER

Arrow-heads and Javelin-heads. These are the most artistic of the flint objects that have come down to us. They fall into series, distinguished by their
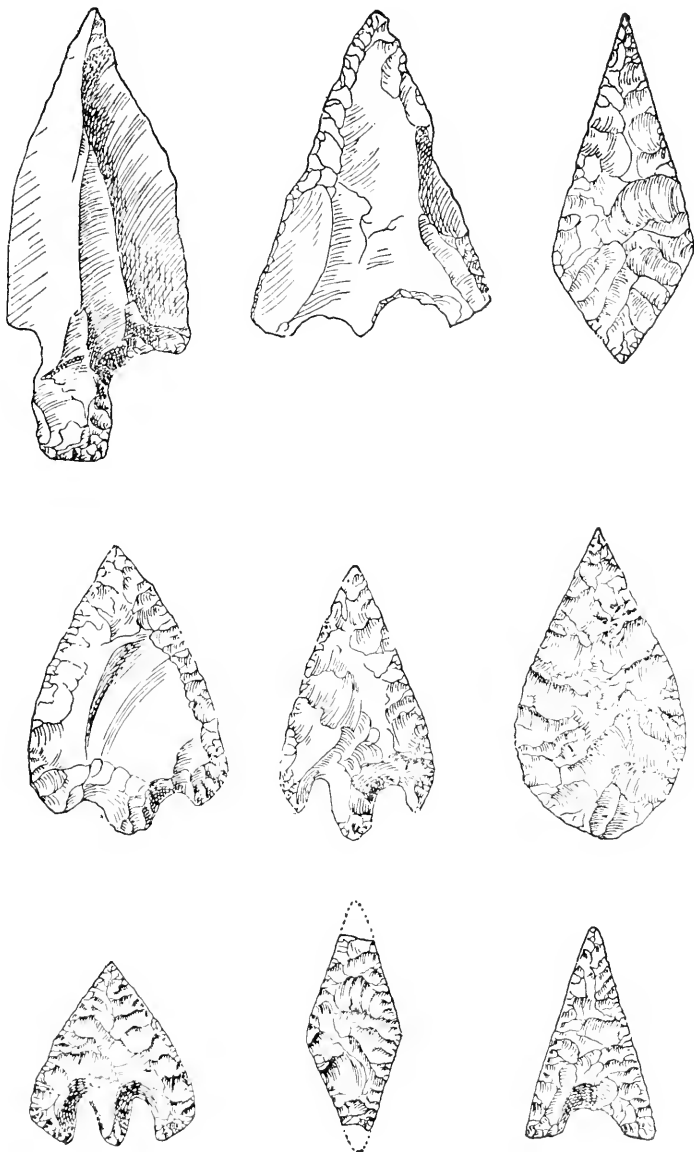
FIG. 12—TYPES OF ARROW AND JAVELIN HEADS

shapes, like the scrapers ; they may be oval, triangular, amygdaloid (lozenge-shaped), or leaf-shaped ; further they may be tanged or tangless, barbed or barbless. A triangular head with the base hollowed is perhaps the commonest form.   Different types are found in the same hoard, so that no ethnological or chronological importance attaches to such classifications. Javelin-heads are distinguished from arrow-heads by their superior size (fig. 12).

These weapons were fitted on to their shafts by splitting the end of the latter and inserting the head, a band of gut being tightly tied round the end to prevent the flint from dropping out.   Two examples are reported of arrow-heads having been found with part of the shaft and of the gut ligature remaining : one of these from Baile an Choillín, in King's Co., now in the possession of Cambridge University : the other from Kanestown, Co. Antrim.[1]
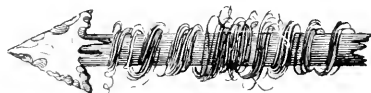
FIG. 13—ARROW-HEAD IN THE ORIGINAL SHAFT

Large weapons of this type are sometimes called spear-heads.   The name is, however, inexact.   A spear differs from a javelin, assegai, or harpoon, in that it is retained in the hand of its wielder, while they are thrown at the person or animal attacked.   Had spears been invented in the Stone Age we should have found bronze spear-heads appearing at a very early date in the bronze Age ; whereas they are quite a late evolution. [A javelin, which when once cast might never be recovered, would not be tipped with bronze, for the metal was too valuable to waste on such extravagant weapons.   Many of the well-made arrow-heads and javelin-heads of flint are most probably of the Bronze Age.   Indeed, some of them display the

[1] Wilde, Catalogue p. 254 : JRSAI xvii. p. 126.

influence of bronze-age shapes reacting upon them, as we shall see later. Arrow-heads are most frequently found in the flint-bearing region of the North of Ireland, but they are not unknown elsewhere in the
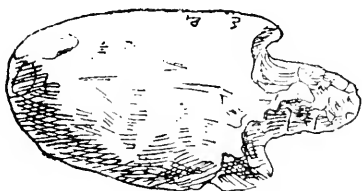
FIG. 14—UNFINISHED ARROW-HEAD (PROVENANCE UNRECORDED)

country. A good specimen from Co. Cork is reported in the Cork Archaeological Society's *Journal*, 1907, page 197. The unfinished example, fig. 14, is especially interesting as illustrating the process of manufacture.

Hammer-stones. These are simply pebbles of a convenient size for manipulation, made of any stone hard enough for the purpose. They were chiefly used for striking off flakes from the flint core, but would naturally be employed for any other purpose that required such a tool. They are to be recognised by the crushed and scratched marks which indicate where the striking end has been (fig. 15). Where there is an
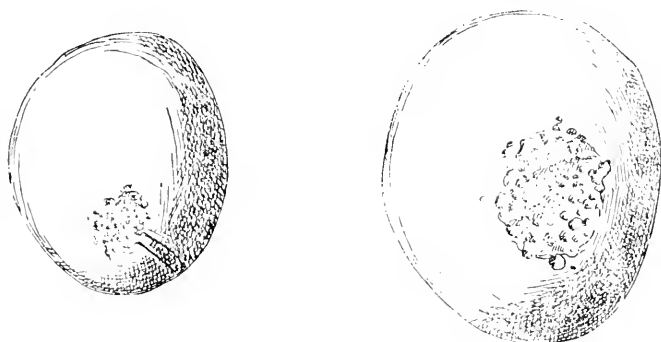
FIG. 15—HAMMERSTONES

abundance of suitable stone, hammer-stones are not often found; for the simple reason that the artificer

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picked up any pebble that came handy, and threw it
away when it had served his purpose ; it was therefore
not long enough in use to receive permanent marks of
wear.   On the other hand, when the supply of suitable
stones was limited, we may find a stone that was used
so much as to be reduced to a spherical shape as the
result of hammering over its whole surface.

Anvil-stones.   Mr. Knowles has given this name,
probably with reason, to a class of stone objects found
in the majority of the implement-bearing sandhills.
These are flat oval slabs of stone, of very different
sizes—some are only three or four inches across,
others large and heavy—with a depression, sometimes
on one, more frequently on both faces (fig. 16).   This

FIG. 16—ANVIL STONE

depression is understood to have been caused by the
use of the stone as a table, or as an anvil, in the course
of the manufacture of flint implements.

These have also been called " oval tool-stones," the
depressions being supposed to have been intentionally
made, for the grip of the fingers and thumb.   Many of
the stones, however, are too large to be thus gripped,
nor are the depressions in a convenient place, or of a
convenient shape, for the purpose ; in fact the useful-
ness of the tool as a hammer is not as a rule improved
by this treatment.   The " anvil " theory is therefore
preferable.

Fabricators.   The fine chipping which distinguished
the better made arrow-heads and knives must have

been made, not by means of the hammer which struck
off the rough flakes, but with a specially prepared
punch. Such a punch is the small tool called a fabri-
cator, which greatly resembles the Campignian pick

in miniature. It was used in pressing off the
minute chips by the removal of which the tool or
weapon under manufacture was brought to its final
shape and finish.

Mr. Knowles has described wedge-shaped pieces
of flint with blunt faces and stout back " probably
used in the manufacture of scrapers and arrow-heads.
By pressing with such implements alternately on
different sides of a flake at the same spot I have been
able to make an indenture similar to that between
the barb and stem of an arrow-head."[1]

Choppers. This name is given to large wide pieces
of flint, of a size and shape adapted for the hand to
grasp them firmly. They are commonest at Whitepark
Bay, though they have also been found at Portstewart.[2]

A group of objects found together in a hut-site at
Cuan Dúin Droma (Co. Down), illustrates the normal
furniture of such sites. It included three finely dressed
scrapers, of larger size than usual ; a flat tool of flint
showing marks of fire ; a thin, long, knife-like flake ;
a fine stone axe, $7\frac{1}{2}$ inches long, of a hard greenish
stone, finely polished ; flakes, cores, hammer-stones,
fragments of pottery, bones, an anvil-stone with a
hollow in one side only, and a small bead.[3]

[1] JAI, ix, 324.
[2] JAI, vii, 203.
[3] The most important of these objects will be found illustrated
in PRIA, xxii, p. 338.

A few words will be all that is necessary regarding the objects other than stone from the Sandhill sites. They are of minor importance. Pins, prickers and needles form the majority of the objects in *bone*. These are splinters of bone, often very artistically turned and shaped, and brought to a point ; the needles are perforated at the butt.

Drills, for perforating holes in stone or in other bone objects, are hollow sections of the long bones of animals. These, when rotated with a drill-bow, agitate sand and water placed on the surface of the object to be perforated, and so in time wear a hole in it.

Tines of antlers have been found at some of the sites ; these may have been used as scoops. Sections of horn, perforated to serve as hammers, have been found at Whitepark Bay.

Of the pottery found in the Sandhills we shall speak in the chapter specially devoted to this branch of our subject.

There is little to be said about the costume and the personal ornaments of the Neolithic people. There seems to be no certain record of the discovery of spindle-whorls in unmixed Neolithic sites, which suggests that though spinning was certainly one of the Neolithic industries, it was not practised in this country during the Neolithic period ;` and that the people still clothed themselves in the skins of beasts. At Whitepark Bay have been found lumps of colouring matter, such as ochres, iron oxide, and the like, which may have been used as paint to decorate the person. At Portstewart a number of small beads were found, of an ornamental green stone. These are described as being of about the size, and much the appearance, of small shirt-buttons, having a hollow on one side.[1]

XVII. As we approach the end of the Age of Stone, a very considerable improvement in the technique of stone chipping manifests itself. The implements, instead of being merely flaked into shape with a few

[1] JAI, vi, 485.

bold strokes, are gradually chipped to a symmetrical form. The patience and care displayed in some of these later tools is wonderful. Irish specimens of chipped flint implements cannot compete with the excellence of Scandinavian or Egyptian workmanship, but many of the best specimens come up very nearly to an approximation to those supreme manifestations of skill. It is now, also, that the smoothing-off of the surface of the stone by grinding and polishing begins to be practised. This is chiefly exemplified in the *celt*.

A celt[1] is a bar of stone, so chipped that there is a cutting edge at one end, and a blunt but more or less pointed tail at the other. It is evidently adapted for hafting in a wooden handle, perforated for receiving it, after the fashion of an axe : one or two specimens of celts thus hafted have been found in bogs, in which the wood has been preserved from decay (fig. 19). A specimen from Co. Fermanagh bore traces of a dark brown mastic or gum, which had apparently been smeared over the socket to make its grip the more secure.[2] Some polished celts have been found with a hole partly drilled through the sides. These may possibly be meant for the reception of the ends of wooden pins, passed through the sides of the socket to prevent the axe-head from slipping out. The earliest celts are chipped into shape, sometimes by fine chipping, though not so fine as is to be seen on the best knives and arrow-heads. Constant use of the tool automatically produced a polish on the edge ; it may have been the observation of this fact that suggested the extension of the polish over the whole tool. The maker set himself to imitate the pleasing effect by grinding the stone upon another. At first he seems to have stopped short at grinding off the

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[1] This word is derived from an imaginary Latin word *celtis*, which exists only in a (probably) false reading of some MSS. of the Vulgate in the Book of Job. If used at all it should be pronounced *selt*, to distinguish it from the linguistic term Celt (*kelt*), with which it has nothing whatever to do.

[2] JRSAI, xviii, 482.

sharp ridges between the flakes, but gradually improv-
ing and extending the process he ultimately produced
a tool polished over the whole surface.   When he was
lucky enough to find a stone such as serpentine,
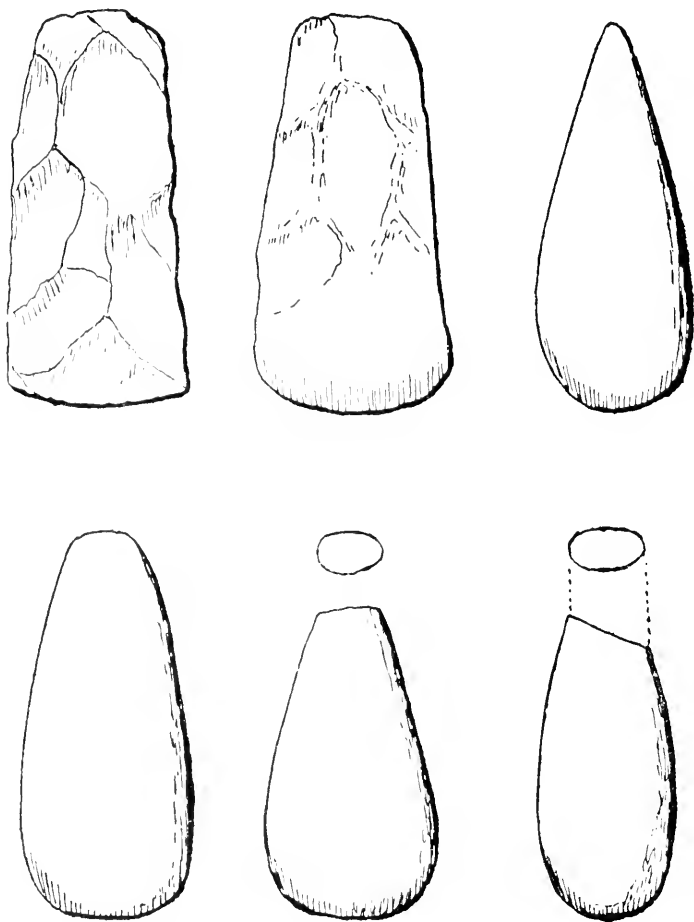
FIG. 18—TYPES OF STONE CELTS, CHIPPED AND POLISHED

capable of taking a high polish, the result was often
a work of art beautiful in itself ; but such highly
polished ornamental stone axes (of which there
are several specimens in the Royal Irish Academy's

collection) can hardly have been meant for use in rough work ; the delicate edge and the smoothly polished surface would very quickly have been destroyed. They may fitly be compared to the well-known ceremonial axes of the Hervey Islands, specimens of which are to be seen in every ethnological museum of any pretensions : these are

FIG. 19—CELT RETAINING ITS ORIGINAL HAFT

mounted in elaborate handles, artistically formed and ornamented, but of so unwieldy a shape that it would be impossible to use the axe for any practical purpose.

Celts are of a considerable variety in size. They are sometimes found of as much as 12 to 18 inches in length, but such large specimens are exceptional, in Ireland as elsewhere. Those between 8 and 12 inches in length are commoner ; but the majority lie between 4 and 7 inches. Smaller celts are sometimes found : examples not more than 1 inch long are not infrequent.[1]

It has been said above that celts have " a blunt but more or less pointed tail " at the end opposite the cutting edge. Mr. E. C. R. Armstrong has published a study of Irish polished celts, with special reference to the shape of the tail.[2] He divides these objects into two classes : in the one the outline is triangular, and the butt pointed ; in the other " the outline assumes a more rectangular shape, where the butt is rounded or roughly squared." The evidence drawn from the associations in which these objects are found is as yet insufficient to determine with certainty which of these

[1] See W. J. Knowles in UJA II, ix, 6.
[2] E. C. R. Armstrong, *Associated Finds of Irish Neolithic Celts*, PRIA, xxxiv, C, p. 81.

types is the earlier : indeed, as some finds have been
made (enumerated in Mr. Armstrong's paper) in
which both classes have been represented, the two
types must have overlapped. But a tentative conclu-
sion, which applies to Britain and to the Continent as
well as to Ireland, is indicated, that the triangular
pointed type was probably the earlier. This is one
of the questions on which we must await further light
from future discoveries.

The natural shape of a stone tool is convex, that
of a metal tool flat. During the period of overlap
between stone and copper, the shape natural to the
one material was sometimes imitated in the other,
the makers not having come to a final decision as to
which were the most suitable shapes to be adopted.
Convex tools in metal are very rare, for the simple
reason that when their inconvenient character became
clear, they would be melted and re-cast in a flat
shape. On the other hand, a few flat celts are found
in stone, though these are unusual ; they are certainly
imitations in stone of the earliest metal celts. The
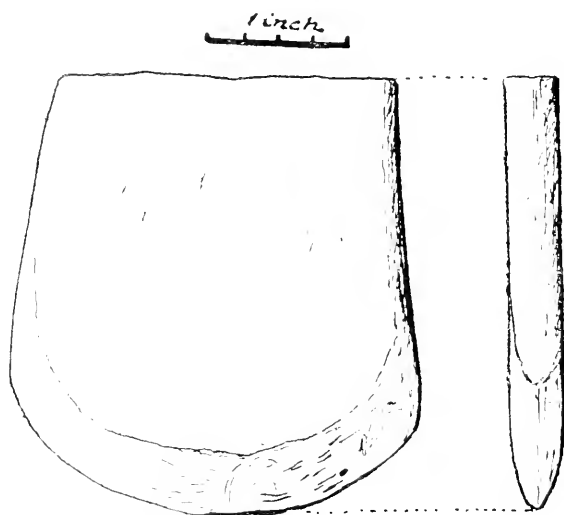
FIG. 20—FLAT STONE CELT

example figured (fig. 20) was found in Loch Gair, Co. Limerick.

A " dummy celt " in shale, found in a cist, is described in PRIA, xxxiii, C, p. 3 : and sword-like rods of the same material have not infrequently been described and figured, and are stored in some of our museums as artificial implements or weapons.   I confess to doubts as to whether such objects are really artificial.[1]

Mallets, Mauls, and Hammer-axes.   These objects (fig. 21) are seldom so highly polished as the average celt.   They are distinguished by their shape.   Mallets are round stones, the smallest being slightly larger than a man's fist, having a perforation drilled through them for receiving a wooden handle.   Mauls are rather larger, and are not perforated : instead a groove
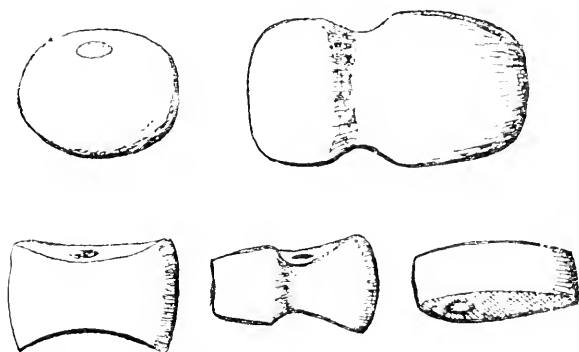
FIG. 21—TYPES OF MALLETS, MAULS, AND HAMMER-AXES

is cut round the body of the stone, which could receive a rope that encircled it and was then wound firmly around the handle.[2]   Hammer-axes are of a more artistic shape.   They resemble in shape our modern

[1] For some curious specimens of such " imaginary " implements see JRSAI, xi, 205, 206.

[2] It may be that some of the heavier specimens of stones of this kind were intended for other purposes : *e.g.*, for securing ropes whereby cattle were tethered.

axe-heads, with a cutting edge at one end and a blunt hammer-like butt at the other : sometimes there are two cutting edges. The top and bottom of the axe-head expand, like the outlines of the deck of a boat, and are usually slightly concave. The illustration shews a number of varieties of these tools. The manufacture of these tools, especially the drilling of the hole, must have been a work of great labour.

A remarkable double axe of polished diorite found near the ruins of the castle of Cúl Mór between Ráith Bhile and Hacketstown (Co. Carlow), may here be referred to (fig. 22). It is $4\frac{1}{2}$ inches long, and has an axe-edge at both ends, and the concavity at top and
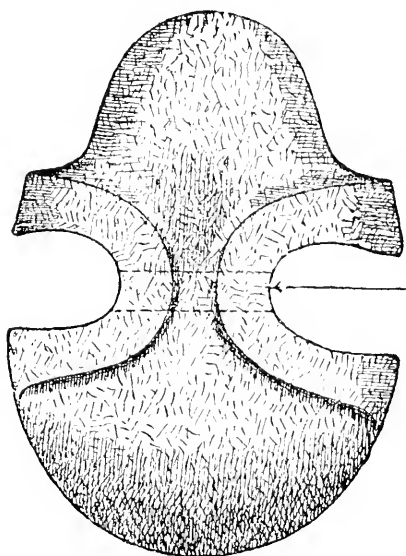
FIG. 22—DIORITE AXE-HEAD, CÚL MOR, CO. CARLOW

bottom is greatly exaggerated (fig. 25). The perforation is remarkably small, and could hardly receive a haft capable of resisting the strain of active use : indeed the high polish of the implement would be destroyed if it were used as an axe. We must conclude that,

like the Hervey Islands axes referred to above, the object was intended for some ceremonial purpose.[1]

Though it is some ways convenient to describe implements of stone thus together, it must be clearly understood that these do not all belong to the Stone Age. Even the flint implements, flakes, scrapers, and, especially, arrows and javelin heads, persisted in use throughout the Bronze Age, and possibly even later : the influence of the shapes of bronze-age weapons on corresponding objects in stone is sometimes to be traced. Flint, notwithstanding its restricted distribution, must always have been cheaper in Ireland than bronze, which depended upon foreign trade to supply its necessary ingredient, tin ; a metal not found in Ireland in appreciable quantities. We have already seen that for weapons which, once shot away, might have been lost permanently, bronze would in this country have been an extravagance : and in point of fact no bronze arrow-heads have been found in Ireland.[2] The hammer-axe just described is a case in point. It is certainly a bronze-age object, having been found in association with a " small bronze axe with ornamented blade " [type, unfortunately, not stated, but probably of the flat flanged or second-period forms] and a fragment of the shank of a bronze pin.

The material used for these tools—celts, hammers, etc.—was whatever hard stone came to hand. Flint was not suitable, on account of its liability to fracture. Bassalt, quartzite, and sandstone are perhaps the commonest stones used for the purpose.

[1] W. Frazer, *On a polished stone implement of novel form, and its probable use.* PRIA, xvii, 215 [the speculations contained in the paper as to the use of the object are not important]. A " celt with a cutting edge at both ends," from Loch Gair, Co. Limerick, is reported in JRSAI, xxii, 42. The description may be given a passing reference here for what it may be worth.

[2] A " bronze arrow-head " said (JRSAI, xxi, 484) to have been found at Rinn Tulaigh in Co. Limerick, is clearly, from the description, a tanged knife.

On the other hand, to question or to deny the existence of a Neolithic age in Ireland, as has been done,[1] is to go far beyond a reasonable interpretation of the evidence.   The evolution of stone implements in Ireland follows the same course as in the neighbouring countries of Europe.   The skill and patience which went to the making of a fine javelin-head were everywhere lost when metal had become firmly established as the materials for weapons : and though the overlap may have been, comparatively speaking, long, it came to an end in time, and, in accordance with the usual law of evolution, reversion was impossible. It has recently been claimed that the arrow-head found in the Sandhill sites may be as late as the Normans,[2] on the ground that there. is no literary evidence in Irish texts or in Giraldus for the pre-Norman use of the bow, though it was a recognised weapon in post-Norman times in the country.   But neither the Irish texts nor Giraldus can tell us anything about pre-Celtic customs : and there is no evidence (such as we should expect were this theory admissible) for the use of flint-tipped arrow-heads by the Normans in England.   The silence of the literary authorities proves not the extreme lateness but the extreme antiquity of the objects in question. Polished stone celts are sometimes found associated with late objects of the Iron Age : this, however, does not prove their late date, as we know that these objects were early credited with supernatural virtues, and were preserved as protection against lightning.

Rubbing-stones and Querns.   Rubbing-stones are pebbles of convenient size for manipulation, split so as to have one side flat, though not absolutely smooth. By rubbing over the grain, or whatever was to be reduced, this fulfilled the purpose for which it was designed.   The example illustrated (fig. 23b) was found by the writer in an ancient hearth on the shore at

[1] *e.g.*, by Rev. G. R. Buick in JRSAI, xx, p. 441 . xxii, p. 318.

[2] By Mr. H. C. Lawlor in *Proceedings*, BNFC, 1917, p. 100.

Laytown, near Droichead Atha. It measures $4\frac{1}{2}$ x $2\frac{1}{2}$ inches, and is 1 inch thick. The quern is a development of this. The Neolithic form of quern (fig. 23a) is what is called the *Saddle-quern*, from the shape of the lower stone ; the rotary quern is of latter introduction. The saddle-quern consists of two stones of granite or rough material ; the lower stone is large and massive, with a flat upper surface, usually slightly concave ; the upper stone has a rounded back, and is of convenient size for grasping The upper stone is rubbed
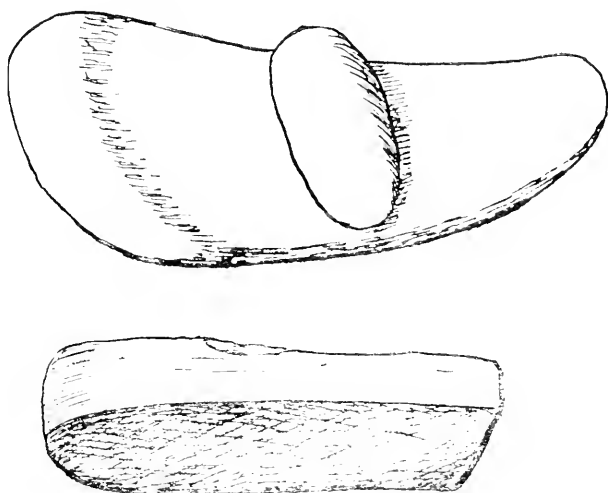
FIG. 23—RUBBING STONE AND SADDLE-QUERN

back and forth over the grain, which is spread on the upper surface of the lower stone.

In some manufactory sites there have been found specimens of *stone tools used in the manufacture of stone implements*. These fall into three groups :—

Hammers, used for roughing the tools into shape, their bruised ends showing that they have been subjected to rough usage.

Grindstones for polishing. These are slabs of sandstone, many of which have been found hollowed or grooved by attrition. Mr. Knowles describes a

grindstone from a turf bog in Baile Cloise[1]—an axe with the sandstone on which it must have been ground lying over it.   More interesting is one found at Cúl Bán, Co. Antrim (fig. 22), embedded in brick earth at a depth of 4 feet, close to which were found six newly-finished ground stone celts.   The grindstone measures 13 inches by 8 inches : it is now in the R.I.A. collection, with the axes.
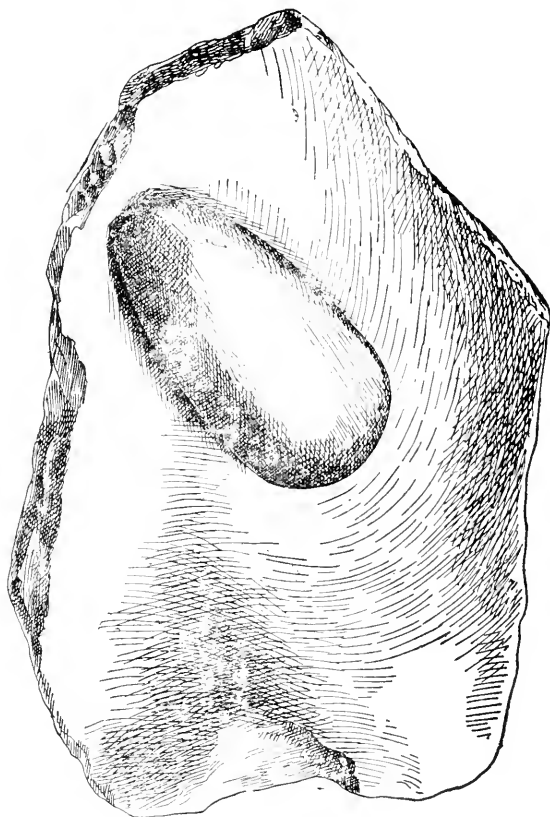
Fig. 24—Grindstone from Cul Ban, Co. Antrim

Whetstones, which are not infrequently made of fragments of celts which have been broken by some accident.

[1] UJA, II, ix, 6.

CHAPTER IV

THE BRONZE AGE

1. Discovery of the Nature and Properties of Metals. II. Consequences of the Discovery. III. Place of the Discovery. IV. Bronze. V. Introduction of Metal-working into Ireland. VI. Irish Gold and its Significance. VII. Ancient Mining in the Country. VIII. The Bronze Celt and its Transformations. IX. The Periods of the Bronze Age. X. Relation of Irish to Foreign Art during the Bronze Age.

THE FIRST PERIOD : I. Celts. II. Moulds. III. The continued Use of Stone. IV. Hammer-axes. V. Copper Daggers.

THE SECOND PERIOD : I. Bronze. II. The Tin Trade. III. Disappearance of the Stone Industry. IV. Celts. V. Daggers and Halberds. VI. Lunulae. VII. Other Gold Objects.

THE THIRD PERIOD : I. Palstaves. II. Daggers. III. Moulds. IV. Torques. V. The Strangford Loch Find.

THE FOURTH PERIOD : I. Celts. II. Socketed Spear-heads. III. Rapiers. IV. Swords. V. Scabbards. VI. Moulds.

THE FIFTH PERIOD : I. The Advance in Civilisation during this Period. II. Celts, Spear-heads, Swords. III. Numerous additional Implements, &c. IV. Shields. V. Pins. VI. The Cupped Bracelet. VII. The Clare Find. VIII. Other types of Gold Ornaments. IX. Amber and Jet. X. Chronology.

I. After the primary discovery of how to make fire artificially ; the discoveries of how to chip stone, how to tame animals, how to cultivate the fruits of the earth, and how to make pottery, the next momentous and epoch-making discovery was undoubtedly that of the nature and the properties of metals, and of how to procure and to shape them to meet the needs of man.

Of all the metals the most lustrous is *Gold*. More-over, as it does not rust, its lustre is permanent. The gleam of gold would early catch the eye of a wandering stone-age man, and he would pick up the yellow pebble and wear it as a powerful amulet. In the Stone Age gold probably existed in comparative abundance in the river gravels, where it had been accumulating since Tertiary times ; mankind had all there was to draw upon. He soon exhausted the supply—it has been observed that gold ornaments of the earlier periods are more massive and more wasteful of the metal than are those of later times—and probably it would take a lapse of years as long again, of steady undisturbed accumulation, to deposit a quantity equal to what was at the disposal of stone-age and early bronze-age man.

Next to gold, the metal most likely to attract atten-tion was *Copper*. Copper is found in a native form, that is, pure and not in an ore, in various parts of the world ; it can there be picked up like stones from the surface of the ground. Our stone-age experimenter found such a lump, which seemed to him of a size, weight, and shape suitable for fashioning into a stone axe. Carrying it home, he would endeavour to chip flakes from it, in the way to which he was accustomed ; but he would find that instead of breaking it, he indented it. Further trials would shew that he could hammer the metal into whatever shape he pleased. Doubtless the first metal tools were imitations of the corresponding stone tools, thus hammered from lumps of copper. That no such hammered tool has been found in Ireland is intelligible, and does not affect the probability that this was the means whereby metal tools were first formed. Indeed, hammered tools are everywhere rare in the Old World. The simple explan-ation is, that when it was found that metal tools could be made much more satisfactorily by the process of fusing and casting, all the old hammered tools would naturally be melted down. In any case we cannot assume that the whole evolution took its course

in Ireland itself ; it is more likely that the art of working metals was not introduced into this country until the methods of fusing and casting had been discovered.

For the invention of this latter process we must again postulate a happy accident. A lump of copper, whether hammered into shape or not does not matter, fell by some chance into the domestic fire. The owner had no tongs with which to rescue it, and he had the mortification of seeing it flow in a liquid stream over the ground. Mortification would give place to curiosity, however, when the stream cooled and hardened in a shape so different from that which it had had before the accident, and preserving on its under surface an impression of the irregularities in the ground over which it had flowed. Without undue straining of the imagination, we can picture our discoverer playing for a while with this wonderful new toy, making trial marks on the ground and finding them exactly reproduced. At last the happy thought would strike him to impress his stone axe in the ground, and to direct the molten metal into the cavity thus formed : he would then be delighted to find that he had thereby acquired no mere plaything, but a very serviceable weapon. Who can say but that the triumphant sword-song of Lamech[1] may voice the joy with which some such early investigator greeted his good fortune ?

At the moment when the copper hardened in this improvised mould, and the experimenter picked it up and saw that it was good, humanity entered the second stage of the upward climb.

II. The consequences of this discovery were for civilisation profound. Weapons and implements could be turned out of the moulds by the score in the same time that it had taken to chip one of them laboriously out of stone. Time was thus saved ; and though uncivilised man has but little positive sense

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[1] Genesis iv, 23.

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of its value, as those of us who have had to do with him know to our cost, yet the saving of time (even if unconscious) is of fundamental importance for the advancement of culture. So long as man has to spend his days in hunting wild beasts to replenish his family larder, starting off on a second expedition almost immediately after he has returned from the first, he can scarcely expect to get very far on the road of self-advancement. When the stone-age savage discovered that animals could be domesticated, and thus kept always ready at hand, and that crops could be cultivated and the grain stored, he found more time on his hands than ever before—especially as the labour of the fields would as a matter of course be delegated to his women-kind. Having no picture-palaces or golf to fool away the time thus saved, he very sensibly applied it to inventing means of improving his position in life, and extending his conquests over the world of nature. The time saved by the invention of metal casting was applied to the same purposes, as we can see from the remains which the Bronze Age has left behind. For the Bronze Age was a period of comparatively rapid advance.

III. Where did this great discovery take place ? The answer to this question is lost in the mists of time. Possibly it was made independently in several different centres ; it is mere nonsense to suppose that all discoveries, inventions, art-motives, and the like, necessarily spread over the world from one centre only. All that we can suggest with any probability, in view of the great gaps still existing in our knowledge, is that Europe is ultimately indebted to Egypt for its knowledge of the nature and the properties of copper. The copper mines of the Sinaitic Peninsula were worked by Egyptian kings of the earliest empire of that ancient country, long before Europe had emerged from the barbarism of the Stone Age. But as copper is an almost universal metal, we cannot infer from its distribution anything about the time and the place of the very first discovery of its properties. The first

lump of copper to be melted and cast, by some process such as we imagined just now, might have undergone that treatment anywhere in the world where native copper is to be picked up.

When the properties of copper became known, we can easily believe that there would be an eager search in all sorts of possible and impossible places for the precious nodules. In this search other analogous " finds " would be made—such as the more metallic-looking ores. Means of reducing these would gradually be discovered. The ore of *Tin*, though dull in colour, would attract attention by its weight, and when cast into the fire it would run out in a brilliant silvery stream. Tin, however, would at first make no appeal to the practical copper-age man. The softness of copper was trouble enough : this was the great drawback of the new material. Copper tools must have been a constant nuisance, owing to their edges turning. But tin would be still worse in this respect, and probably after a few tests those who discovered it came to the conclusion that it was useless.

IV. But one more surprising discovery was in store. Perhaps someone with a shortage of copper, as a makeshift dropped a bit of tin into the crucible : perhaps a fraudulent manufacturer adulterated his copper with the " useless " metal—for the gentle arts of such people are at least as old as the Bronze Age ; perhaps it was a mere accident or an oversight. But, however it happened, it was found, comparatively soon after the age of metal began, that tin mixed with copper in certain proportions hardened it. When this important fact became generally known, tools were no longer made of pure copper, but of the alloy, which we know by the name of *Bronze*. The Bronze Age, strictly speaking, began with this discovery.

Like many other discoveries of the kind, it had larger consequences than would have been expected at first sight. Not only did it put far more serviceable tools at the disposal of the craftsman and of the warrior, but it proved to be a powerful stimulus to

the development of trade.   Copper is spread fairly extensively over the surface of the earth, but this is not the case of tin.   That metal is found in a limited number of places only, and anyone outside those favoured regions who wants it must trade for it. This was a happy circumstance for the history of civilisation.   Caravans oscillated over Europe, carrying down tin to the centres of Mediterranean civilisation, and helping to level up the barbarous tribes of the north who were thus brought, at least indirectly, into touch with their more advanced fellow-men.   With tin as a civilising agent must be coupled amber, the beauty and the uncanny electrical properties of which made it a material much desired for ornaments and amulets.   The great ladies of Crete wanted amber to deck themselves, while their lords wanted tin to help to make their weapons.   So merchants had to travel back and forth along the lines of the great rivers, carrying amber from the Baltic shores, and tin from Spain and possibly also from Cornwall.   Thus a give-and-take of knowledge and of art was developed throughout Europe, without which civilisation would have been retarded for many centuries.

V. There is no reason to suppose that Ireland was in any way behind the rest of Northern Europe in the adoption of the new metal and its technique.   On the contrary, there are in this country numerous remains of the Copper Age—the first period of the Age of Metal.   Naturally these are fewer in actual numbers than are those of the later stages, for the reason already given in another connexion—that pure copper tools would be re-melted so soon as the advantage of mixing the unalloyed metal with tin was understood.   The surviving tools of copper are merely those which have from one accident or another escaped the re-melting process.

The knowledge of metals seems to have been brought into Ireland in a manner different from that of its introduction into England. In England there are distinct signs of an invasion by conquerors, at

the beginning of the Bronze Age, who with their superior weapons carried all before them in England, and there changed the racial character of the population, as well as its religious ideas (so far as we can judge from the burial ritual illustrated by tombs which have been opened). For some unknown reason these immigrants did not pursue their conquests to Ireland. The advent of bronze into England is associated with the coming of a brachycephalic immigrant population; while the people of Ireland remain dolichocephalic after the introduction of bronze, as before. It is, however, impossible to say whether copper weapons and the knowledge of how to make them were brought over by refugees or slaves from England, or whether the native Irish of the time were astute enough to make terms with the newcomers and to treat and trade with them, thereby acquiring their contribution to civilisation by way of peaceful commerce.

In any case the development of commerce between Ireland and England would be a necessity for the former island. Tin is very sparsely distributed in Ireland :[1] to obtain a supply sufficient for the needs of the Bronze Age it would have to be purchased from over-sea. The source from which Ireland could be supplied with tin, with the greatest ease, is obviously Cornwall.

VI. But it would have been impossible to get tin from Cornwall for nothing. The owners of the mines there were shrewd men of business, thoroughly alive to the value of their property. This is shewn by the devices whereby the exact source of the tin was kept a secret from the Mediterranean traders. It is also shewn by the absence of pure tin from the hoards of bronze-casters which have been found in England from time to time[2]. These contain pure copper,

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[1] See on this subject a note by Mr. T. Hallissy appended to Mr. E. C. R. Armstrong's paper on *Bronze Celts discovered in Ireland*, in PRIA, xxxiii C, p. 524–5.

[2] On these hoards see Sir John Evans, *Ancient Bronze Implements of Great Britain, passim*, especially pp. 459, *et seqq.*

bronze, broken fragments bought up for re-melting, moulds, and all the other paraphernalia—except pure tin : a fact which shews that the mine-owners did not allow the pure tin to get about the country, but that they kept the alloying-trade in their own hands.

But fortunately Ireland had something to give in exchange for the Cornish tin : namely, Gold.   The gold of Wicklow made the bronze-age development of Ireland possible, and a word about the gold-fields there will not be out of place.   The following particulars are extracted from the *Journal* of the Geological Society of Ireland [1]:—

"The source of the auriferous stream is the mountain Croghan Kinshela, whose summit forms a portion of the boundary between the counties Wicklow and Wexford. The stream from which most of the gold has been obtained rises in the N.E. side of the mountain, and, flowing down one of the glens with which that part of the country is intersected in almost every direction, joins the Aughrim River a little above the confluence of the latter stream with the Avonmore.   It receives several smaller streams at different parts of its course, in all of which *some* gold appears to have been found, though in general in such small quantity as not to repay the cost of its extraction.   Small pieces of the precious metal had been accidentally found by individuals, at various times preceding the year 1795, in which year great numbers of the peasantry, excited by the account of some large pieces which had been casually discovered, began to search for gold, though in a very unskilful and desultory manner.   About six weeks afterwards the government took possession of the mines, and stationed a detachment of militia to keep out the peasantry. The latter had, however, obtained about 800 oz. of gold during the short period they continued at work. The government then took the washings into their own hands, and continued to search for about six years, not confining themselves merely to washing the alluvial matter constituting the bed of the stream, but also driving a level into the sides of the mountain, in search of the vein in which the gold was supposed to be embedded.   These trials, however, proved unproductive, and the expense exceeding the value of the gold obtained, the government abandoned the workings in 1803, since which time a few of the peasants of the country round have occupied themselves irregularly and at intervals, in searching the sand which had been carelessly turned over before, and from which they still obtain some gold in small quantities, but scarcely sufficient to afford them the means

[1] Vol. iv, p. 269.

of subsistence. About six or seven years ago [*i.e.*, about 1849] some further attempts in search of gold were made by a company organized for the purpose, by cutting extensive trenches at right angles to the course of the Ballinvalley stream. These, however, were unsuccessful, and the washing is again solely carried on by a small number of the peasantry.

" Gold occurs here in grains of all sizes, from the smallest spangle up to a mass weighing 22 oz., the largest hitherto found."

Of the ancient wealth of Ireland in gold a sufficient proof is the great collection of ornaments in that material, unsurpassed by any other national collection in Europe, which has been accumulated by the Royal Irish Academy during the century and a quarter of its existence. This is only a small part of the store of gold ornaments that have been found from time to time in the country and melted down. To say nothing of the great Clare find, to be described briefly on a later page, the following objects of gold not in the collection mentioned, may be enumerated :—

1.—A " yard " of pure gold about 28 ins. long, and as thick as a man's finger : a ring large enough to compass a man's head, three large loops and another smaller, and a piece " in the figure of a pair of tongs " [a cupped ring] two spans long and of equal thickness with the yard. In the possession of a man in Queen's County, in 1673.[1]

2.—The following objects, found in the bog of Cuillean na gCuanach, Co. Tipperary, at intervals between 1732 and 1771.

(*a*).—A piece of gold, shaped like a half egg, 3 oz.

(*b*).—A circular plate of beaten gold, 8 inches diameter, wrapped round three ingots weighing not less than 1 lb.

(*c*).—An elliptical plate of gold.

(*d*).—A small gold cup.

(*e*).—A tube of gold 4 inches long, weighing 1 oz., 7 dwts., 20 grs.

(*f*).—A thin plate of gold rolled on another, which when extended was 14 inches long and ¼ inch broad.

(*g*).—Parts of a plate of gold, with a gold wire " inlayed about the rim and about 3 inches towards the centre, where was a gold twist sewed in and out."

(*h*).—A small plate of gold in the form of an equilateral triangle.

According to a deposition published JRSAI v, p. 207.

(*i*).—A bronze sword, with a plate of gold in the hilt, and a gold pommel.

(*j*).—A plate of gold, " beautifully chased and embossed," 6 inches long, 5 inches wide at one end, 4 inches at the other, weighing 2 oz.

(*k*).—A hollow piece of gold, in the form of the scabbard of a sword, weighing 1 oz., 23 dwt., 17 grs.

(*l*).—A gold vessel with carved handle, chased and engraved, 10 ozs., 12 dwt., 23 grs.

(*m*).—Two thin leaves of gold.

(*n*).—A piece of gold in the form of a scallop.

(*o*).—Two pieces of gold weighing 3 ozs., 9 dwt., 21 grs.

(*p*).—Miscellaneous fragments, weighing together over 30 oz.[1]

(3).—A twisted rod of pure gold weighing 22 oz., found near Baile an Chaisleain, Co. Antrim (a torque straightened out).[2]

(4).—A letter in *Athenaeum*, 22 October 1859, p. 533, refers to two great finds of gold, one of which at the time of writing was being sold to London and melted piecemeal : the other had been made at some place vaguely indicated as near the Sinann river : this is said to have been sold to Dublin goldsmiths for £27,000. This last find can hardly be dissociated from a story of an underground chamber found at Cluain maccu Nois, with Ogham inscriptions, gold ornaments, etc., etc., which went the round of the press in 1861.[3] The truth of this story was categorically denied by the Rector of Cluain maccu Nois at a meeting of the Kilkenny Archaeological Society.[4] At the time the country was much excited over the great Clare gold-find, and many of these tales may be fictions based upon that solitary definite fact.

For a very full discussion of the use of gold in Ancient Ireland, the reader may be referred to Mr. Armstrong's *Catalogue of Irish Gold Ornaments in the collection of the Royal Irish Academy* (Dublin, 1920).

VII. When we turn to the ancient records, we find that the Wicklow region was known in ancient times to be the gold-field of Ireland. The annalists and the historians tell us that under king Tighearnmhas, who, they say, reigned *Anno Mundi* 3656—that is to say B.C. 1543—one Uchadan smelted gold in the region of

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[1] Vallancey, *Collectanea*, vi, 257, quoted from *Archaeologia*, vol. iii.

[2] *Archaeologia*, xvi, 353.

[3] See for example *Gentleman's Magazine*, 1861, ii, p. 357.

[4] JRSAI, vol. vi (1860–61), p. 848.

eastern Life : the district through which runs the river Ruirtheach, now wrongly called the Liffey. This is close enough to the region where gold has been found in recent times to shew that we have here a historical basis to the tradition, although the date assigned, being part of a late artificial scheme of chronology, is of no special importance, and Tighearnmhas himself is rather a legendary culture-hero than a historical character.

It is remarkable that in ancient Ireland, as in the days of king Solomon, *Silver* seems to have been of no account. There is not a single genuine object of silver found in the country older than the introduction of Christianity. The numerous references to ornaments of gold and *silver* in the romances are therefore all interpolations made by Christian scribes and story-tellers. Certain torques and other ornaments of silver, said to have been found in Ireland, have been described from time to time, but these are one and all, without exception, forgeries.

In fact, there is very little native silver in Ireland, and the process of extracting the silver from the ore is much more difficult than the winning of gold from river-washings. But silver was used in the country for making a gold alloy, similar to the electrum of the Greek and Roman craftsmen. The following analysis of three gold torques, apparently of different provenance, speaks for itself :—[1]

		A	B	C
Gold	per cent.	71.01	71.54	79.48
Silver	,,	24.09	23.67	18.01
Copper	,,	4.67	4.62	2.48
Lead	,,	—	Trace	—
		99.77	99.83	99.97
Fineness of gold in carats		17.04	17.17	19.07

[1] E. A. Smith, *Notes on the Composition of Ancient Irish Gold and Silver Ornaments*, PRIA, xix, 733.

As yet there is an insufficient body of analyses published, and it cannot be said whether these proportions are typical of a large number of the ornaments which have come down to us. But the results suggest that silver was imported from abroad by the Irish goldsmiths for alloying purposes, and that the process was carried out as formally, with as due regard to the proper proportion of the metals, as in the combination of copper and tin to make bronze. Most of the extant gold ornaments seem, however, to be of pure gold.

It is hard to say how far copper was mined for in Ireland itself during the Bronze Age, or whether it, like the tin, was imported from over-sea. There are sundry remains of old mines in the neighbourhood of Ceall Airneadh and elsewhere, but it is not easy to determine exactly the period to which they belong. A large number of stone hammers from old copper mines in this neighbourhood were in the possession of the late Mr. Day.[1] There are some old lead mines in the barony of Tulach, Co. Clare, which were re-opened in the first half of the nineteenth century ; but iron tools were found within them, clearly dating the workings to a period later than that with which we are at present concerned. More to the point was an interesting discovery, too briefly reported[2] as follows :—

" Dr. Caulfield exhibited a stone celt 12 inches long, which with eleven others were found under the following circumstances. In Autumn 1854, Mr. R. B. Hungerford was shooting on his property on the top of the hill of Ballyrizard, West Carbery, Co. Cork. Having taken shelter in a small cave on the hillside from a heavy shower, he observed a liquid of a green colour percolating through a small aperture in the inner side of the recess. Subsequently he probed it with an iron bar, but without any result. But on striking the bar into the ground at the entrance of the cave it immediately disappeared. Two or three labourers were employed to dig it out, beginning some feet west of the place where the bar went down, and on clearing out the rubbish they came on a chamber

[1] JRSAI, xvi, 281.
[2] JRSAI, xv, 341.

about 12 feet square. Here, among the débris they found a quantity
of bits of copper ore, and in a corner twelve celts. The discovery
pointed to some ancient mining operations . . . . and to the
use of copper. All the celts had been much chipped at their edges.
This fact led to an examination of the entire farm, on which ten
or twelve parallel lodes of copper were found."

Even more definite is the following, communicated
by John Windele of Cork in the *Ulster Journal of
Archaeology*[1] from particulars supplied by Thomas
Swanston of Crann Liath :—

" In searching during the early part of 1846 for indications of
copper ore in the west of the county of Cork, under the direction
of Capt. Thomas Cornwall, no less than six old mine-holes were
discovered in the lands of Derrycarhoon, three miles N.E. of
Ballydehob, of which no previous tradition or even suspicion had
been entertained. They were all parallel lodes, one of them about
thirty fathoms in length, and ten feet broad, though its breadth
was not certainly known. They were filled at the bottom with
rubbish, and at the top were overlaid with ' bog stuff ' to a depth
in some places of over 14 feet. A strange wooden tube, curved,
and partly open in front, and a ladder 18 feet long, formed of a
single piece of black oak with thirteen steps cut into it on one side,
were also found ; as well as a number of heavy mauls weighing
from 3 to 7 lbs., with a cord-groove round them.[2] These old
shafts had been worked with considerable skill. Arches of rock
uncut had been left by the miners to keep the walls of the lodes
from closing. ' I may mention,' says Mr. Swanston, ' as perhaps
a help to arrive at some conclusion as to the date of these works,
that there is a stratum of whitish slime such as runs off in the wash-
ing of copper lying between two strata of bog, the upper of which
is three and a half feet thick. The bog in which this appears lies
a few yards lower down the hill than the mouth of the mines."

VIII. The chronology of the Bronze Age can best
be studied after we have described the implements
and the weapons that belong to it ; but before pro-
ceeding to do so, it will be necessary to state briefly

[1] UJA I, ix, 212.

[2] It appears that the peasantry explained these grooves as having
been worn by the thumbs of the miners ! Similar mauls were
found in an old mine at Muc-ros ; see Hall's *Ireland*, i, 240. Déche-
lette in his *Manual d'archéologie* (i, 530) figures similar objects
from France, Spain, and North America.

how the Bronze Age is subdivided into periods.
For the differentiation of these, the transformations
undergone by the Bronze Celt afford the most con-
venient guide.   It is a very instructive process to
follow (see fig. 25).

The oldest metal celt is a translation, so to speak,
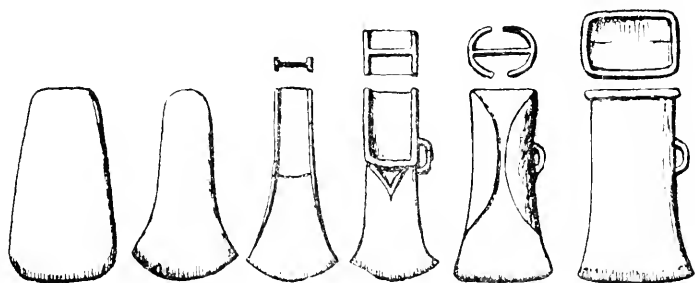
FIG. 25—THE EVOLUTION OF THE BRONZE CELT

into the new material, of the polished stone celt
which we have already described.   A very few speci-
mens are extant with the convex surface proper to
the stone implement ; for the greater part, however,
these have been re-melted when more convenient
forms were evolved, so that it is not surprising that
convex copper celts are extremely rare.

Before the discovery of Bronze closed the Copper
Age, the flat celt had been evolved.   This tool re-
sembles in outline the polished stone celt, but its
sides are flat.   The efficiency of the tool is much
increased, while at the same time metal is saved.
The advantage of the flat tool immediately became
apparent, and we occasionally find efforts made to
imitate it in the cheaper but less easily worked material,
Stone.

On the other hand, the flat celt had one disadvan-
tage.   The stone and convex copper celts could be
hafted easily, by passing them through a hole in the
wooden handle.   But the flat celt could not be so
treated.   There was no longer a " bulge " which

prevented the axe-head from slipping too far into the wood, and the flat celt was found to wedge itself back, as blows were struck with it, into the handle, thus splitting it and rendering it useless.

The inventiveness of copper-age man was equal to the problem. Instead of taking a straight stick and cutting a hole in it, he took a section of the branch of a tree from the end of which projected the stump of a side branch. This stump he split, and into the split he inserted his axe-head, binding it tightly in position with thongs. He thus provided himself with a handle suitably bent for the purposes of an axe, while at the same time the cross-grains at the junction of the branch and the side stump strengthened the haft at the point where it received the shock of the blows.

But the instrument was not perfect yet. The strongest thongs were insufficient to prevent the axe-head from "wobbling" in the slit cut for its reception, and so working loose. Moreover, in time the axe-head acted as a wedge and enlarged the slit unduly. About the time when pure copper was giving place to bronze this difficulty was surmounted by providing the edges of the blade with flanges—raised marginal collars which gripped the wooden handle and prevented lateral motion. A stop-ridge, carried across the face of the blade, prevented the head from sinking too far into the handle (fig. 26). At first the flanges and the stop-ridge were very slight, but they gradually were increased in size, and indeed the subsequent evolution to a large extent consisted of modifications of these parts of the tool. At this time, also, the sides of the implement began to be ornamented with marks hammered or punched on the surface.

The further development lay in the increase of the flanges and the stop-ridges, till they produced a sort of cell or pocket on each side of the blade. At the same time the blade itself was made smaller and narrower. The finished tool at this stage is commonly

called a *palstave*, a corruption of an Icelandic word.[1] Another new feature which appears at this stage is the addition of a loop at the side of the tool—clearly for a thong with which it could be tied to the haft and so prevented from flying off.   *Cast* ornament (not engraved or punched) now makes its appearance for the first time.   This most frequently takes the form
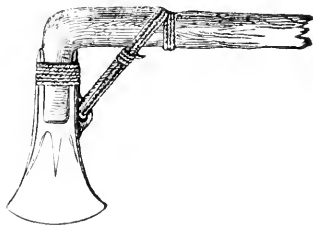
FIG. 26—HAFTED PALSTAVE

of a shield-like projection just under the stop-ridge. Palstaves are sometimes found with double loops, one on each side.   In such cases we must suppose *either* that the tool was mounted on a straight handle, as a modern chisel, *or* that it was hafted in the ordinary way, and that the second loop was provided so that the blade could be reversed, if there was any reason for doing so.

In the bed of a stream near Fearann Fuar, Co. Kerry, was found a palstave enclosed in a leather case.   Most unfortunately the fisherman who made this unique find threw the leather away, in ignorance of its value, and kept the palstave, believing it to be gold.[2]

The side flanges still continue to grow in size, and

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[1] There seems to be some confusion as to *which* Icelandic word the term is derived from.   In Icelandic *páll* means a hoe or spud, *pállsstafr* would mean the " staff " or *handle* of such a tool.   On the other hand there is a word *pálstafr* occurring in some of the sagas, denoting a sort of missile.   Either word is therefore inapplicable, in strictness, to the tool before us ; but quite apart from its etymology it has become so well established as an archaeological term that it can hardly be dislodged, though to a purist it should be almost as objectionable as the word " celt " itself.

[2] JRSAI, xvi, 281.

the next stage is reached when the angle between the
flanges and the stop-ridge disappears—in other words,
the stop-ridge becomes absorbed in the flanges, and
the cell or pocket which characterises the palstave
type instead of being square-ended becomes pointed.
At this stage the flanges are of such great size that
they almost meet on the outer side of the handle, and
are invariably bent to follow the curve of its surface.

Finally the flanges meet one another and coalesce ;
the septum of metal which formed the tail of the
original axe-head is suppressed ; and we are left with
a *socketed celt*, the last stage of development. With
the advent of the socket the necessity of splitting the
handle ceased. The side loop is retained and the
axe-head is bound to the haft with thongs (fig. 27).
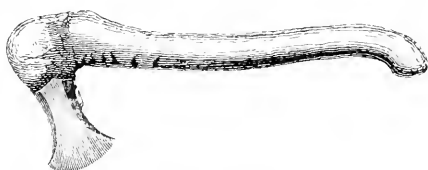
FIG. 27—HAFTED SOCKETED AXE

IX. The periods of the Bronze Age follow this
development. The FIRST of these is the Copper Age,
in which tools were made of unalloyed copper. Some
writers talk about an *Aeneolithic Age*. If it be neces-
sary to use such a clumsy word, it should be restricted
to the transitional period when the metal was treated
as a stone, and *hammered* into shape. This period is
really the last phase of the Stone Age ; the dividing
line was crossed when the metal was fused and cast.
The Copper Age proper is the period of the *flat copper
axes*, without flange.

The SECOND period is that of the *flat flanged axes*—
the first Bronze period, strictly speaking.

The THIRD is the *palstave* period : the FOURTH the
period of the axes with exaggerated flanges (" *winged
celts* "), developing into the *socketed celts* which
specially characterise the FIFTH period.

X. One last question remains to be considered before we proceed to a description of the Irish weapons and implements of the Bronze Age. Did this evolution which we have traced work itself out in Ireland independently, or were the successive improvements in the bronze celt invented abroad and imported into Ireland ?

The fact that the same line of development was followed all over Europe shews that no one region can claim to have the credit of these successive inventions. There are certain slight local differences in style, but the general form of the tool passes through the same series of transformations. There was in fact an essential unity in the culture of northern Europe, and Ireland had a share in it, but did not necessarily originate anything in it. On the other hand, owing to the wealth of remains that have come down to us in Ireland from the Bronze Age, perhaps there is no other country of northern Europe that affords such full material for the study of bronze-age civilisation. Ireland, in fact, is the great pre-historic museum of northern Europe.

There is one interesting fact which shews that the socketed celt, at least, must have been imported. In countries where the socketed celt has developed by natural evolution from the palstave, it often displays a reminiscence of the " wings " of the previous stage, in the shape of a pair of ornamental curves cast on the outer surface of the socket. No socketed celts have been found in Ireland, so far as I have been able to discover after much search, bearing this ornament. This shews that at some time a limited number of socketed celts without this particular ornament— probably of inferior quality—were imported into Ireland, and that these set the models from which the socketed celts made in the country were imitated. That the Irish socketed celts were not *all* imported, but were made locally, is shewn by the existence in the country of moulds for casting them : besides,

had all of them been imported, we should certainly have found many among them with the ornament mentioned. The total absence of this ornament can be explained only in the way set forth above, and thus an interesting historic fact can be recovered.[1]

THE FIRST PERIOD

I. The first period is, as we have already said, the same as the Age of Copper ; and is so much a time of transition that it might almost equally well be spoken of as the last phase of the Stone Age. Chipped and polished implements of stone are freely used : in fact the use of copper for a certain limited number of objects is the only distinguishing feature which this period presents. As the copper is fused and cast, however, not hammered into shape, it is more correct to class the Copper Age with the Age of Metal which follows it than with the Age of Stone which precedes it.

The Copper Celt (fig. 28) is a blade, shaped in outline like the polished celts of stone, but flat and not convex in section. There is a broad cutting edge at one end of the blade ; the other end, called the tail or the butt, is narrow and blunt. These implements range from about 3 to about 6 inches in length. They are usually roughly made, and they show every sign of being the first tentative efforts in a new technique. In the earliest and rudest tools of this type the sides are straight, tapering regularly from the edge to the tail. But it was soon found that the efficiency of the tool was not impaired, and that metal was economised by making the sides concave in outline ; a cusp accordingly began to appear at the end of the edge. From the cusp the side of the tool curves inwards towards the tail.

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[1] Sir John Evans (*Bronze Implements*, p. 132), figures a celt of this kind, with the curved ornaments " from the Crofton Croker Collection." Though this suggests an Irish origin for the specimen in question, it is not conclusive—a good illustration of the importance of recording the *provenance* of objects of antiquity.

I

II. In the previous chapter an experimenter was pictured, making hollows in the floor of his hut, and amusing himself by directing the flow of molten metal into them and watching the result. Some such process must have preceded the manufacture of tools
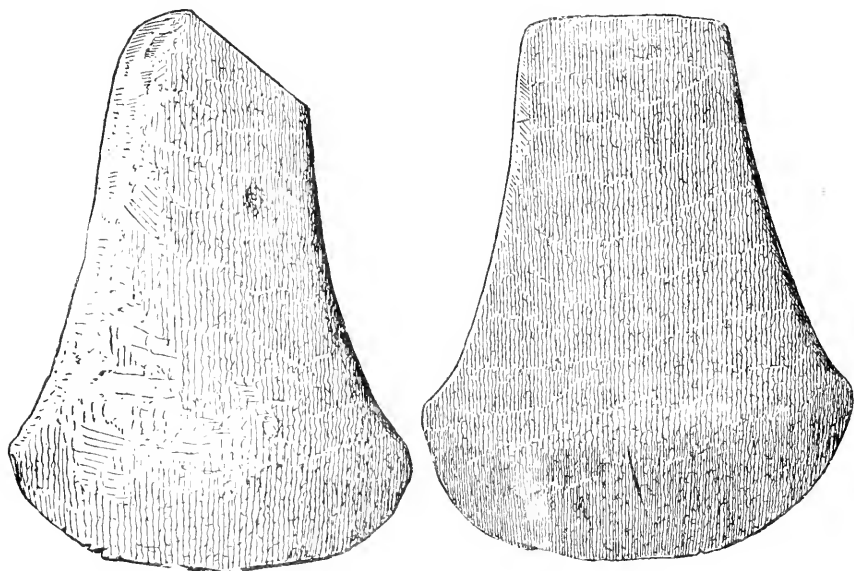
FIG. 28—COPPER CELTS

of metal by casting. The first moulds must have been open hollows in the ground ; the oldest moulds that have survived to our time are similar open hollows in blocks of stone—merely a permanent form of the
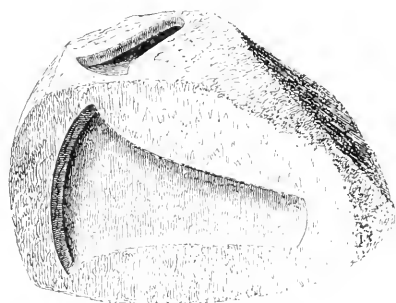
FIG. 29—MOULDS FOR CASTING FLAT CELTS

open moulds of clay (fig. 29). The indentations correspond to the outlines of the implements which it was desired to make ; the molten copper was poured into them, and left uncovered, to cool and harden. It was then taken out, and slightly trimmed and sharpened ; and the tool was complete.

III. The introduction of metal, so far from being the immediate death-blow to the use of flint that we might have expected, proved to be a stimulus to the workers in stone to produce weapons comparable in smoothness and fineness with the objects in the new material. The metal was rare in comparison with stone, and even down to the end of the Bronze Age waste scraps of broken tools were bought up for re-melting. One such bronze-caster's hoard was found, many years ago, in Co. Roscommon ; it contained fragments of some objects of whose types no perfect specimen has been found in the country[1]; the character of the fragments shewed that the hoard belonged to the fifth period. An even later hoard was that found at Annesborough, Co. Armagh, the component objects of which are now preserved in the Museum of the Royal Irish Academy.[2] This group consists of a bronze torque, broken ; a palstave ; and two feature-less bracelets. Together these might have been a third-period hoard : but along with them, and not to be separated from the hoard, was a brooch of Roman provincial type, not earlier than the first century B.C.

Stone still had the advantage of cheapness ; but a chipped stone tool would be disagreeably rough in comparison with a smooth metal implement, and we can hardly doubt that the high polish which the later stone implements display was the result of an attempt to carry the technique of stone polishing to the stand-ard set by the later material. This reaction of metal on stone is not infrequently to be observed in imple-ments from the overlap period. It is practically

[1] JRSAI, xi, 120 : xv, 265, 266.
[2] PRIA, xxxii, C, p. 171.

certain that the magnificent flint daggers of Scandi-
navia, by far the finest examples of flint-chipping
that Europe affords, are due directly to the attempt
to emulate the works of the copper caster.   In Ireland
and elsewhere flat *stone* celts sometimes come to light
(fig. 20 *ante*), which are certainly translations into
stone of a type produced originally by metal workers.
Indeed, it was doubtless this ambitious spirit of emu-
lation, rather than the direct advantage of metal over
stone, which ultimately killed the stone industry.   For
stone had a certain superiority over pure copper.   It
was harder, and a stone edge was not continually
becoming turned.   But as the frog burst when it tried
to emulate the ox, so the stone workers exhausted
themselves when they laboured to produce tools in
their difficult material such as could be turned much
more expeditiously out of the moulds.

IV. From what has been said in the preceding
paragraph it will be seen that the Copper Age was
distinguished by finely polished tools and weapons in
stone, such as are conspicuous in every good collection
of pre-historic antiquities.   Among these we must
especially mention the hammer-axes, the most formid-
able weapon at the disposal of the warrior of the time.
We have given a description of these objects in the
preceding chapter.   The characteristic which made
the hammer-axe so valuable was its massiveness and
weight—which would have been unattainable in
metal without an extravagant expenditure of the
material.   It was natural, therefore, that these weapons
should be made of heavy blocks of stone.

V. There is another weapon of metal to be assigned
to this period : the triangular tangless dagger, which
is likewise an imitation of the corresponding weapon
in flint (fig. 31).   The blade of this dagger is usually
rounded at the butt, and is fitted into a handle of horn,
wood, or bone, to which it was secured with metal
rivets.   The triangular form of the blade is often
obscured, in actual specimens, by the result of later
grinding and sharpening, which has the effect of

making the originally straight edges of the blade concave. It is to be noticed that this concave edge is sometimes imitated in flint arrow-heads, most of which
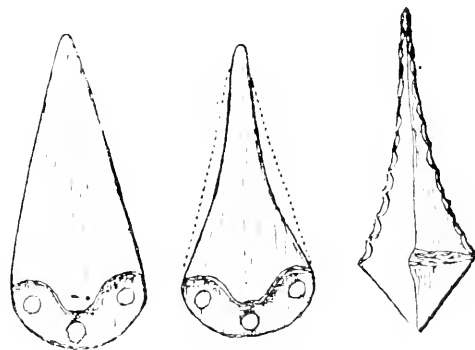
FIG. 31—TRIANGULAR DAGGERS

are almost certainly to be ascribed to the Bronze Age : an example is added to fig. 28.

THE SECOND PERIOD

I. The Second Period of the Bronze Age was inaugurated by the discovery of the art of making the bronze alloy. This development of a use for tin, at first, apparently, a useless metal, was a stimulus to trade ; and for northern Europe at least, Cornwall must have at once become a region of outstanding importance. Only there was the metal to be found in sufficient quantity. For Cornish tin (or, more probably, for bronze alloyed in Cornwall with tin) Ireland bartered gold ; and the fine collection of bronze implements and weapons of Irish provenance in the collection of the Royal Irish Academy is a testimony to the active commercial enterprise of the Bronze Age.

II. The fantasies of Vallancey and others of his school—fantasies which are not confined to him or to his period, but which crop up even yet in popular publications—were to a great extent based on a mis-

understanding of the nature and the processes of the tin trade. It was supposed that the Mediterranean peoples, especially the Phoenicians, traded directly with the tin owners of Cornwall. From this it was but a step to suppose that it was the Phoenicians who brought their civilisation and their religious beliefs and cultus to these islands. Happily for the theorists, nobody even yet knows very much about the Phoenicians, their religion and their civilisation, so there was and still is free scope for speculation—of which Vallancey and his modern imitators have fully availed themselves.

The true nature of the tin trade and the method of its prosecution can be well illustrated by a modern instance which came under my own notice, worth mentioning on account of its own interest. When I was conducting excavations for the Palestine Exploration Fund at a site within view of the town of Jaffa, one of my workmen wished to send some money to his son, then in military service near Lake Van in Armenia—a distance of about 630 miles as the crow flies. Having good reason to distrust the official Turkish post, in the matter of the safe transport of valuables, he gave the packet to a muleteer of his acquaintance who was going on his own business to Nablus. In the market there the muleteer met another proceeding to Damascus, and he delivered the packet into his keeping. Thence it passed by the same means to Aleppo ; and so on, from hand to hand and from town to town, till it reached the person for whom it was intended. A letter acknowledging the receipt was sent southwards by the same route, and reached the original sender about two months from the beginning of the transaction. In like manner the tin was carried across the continent by a series of caravans, exchanging their goods at the meeting-places. Doubtless they exchanged other things as well—folk-stories, news, descriptions of new discoveries, and so forth— and thus the development of civilisation progressed over the whole area of the continent.

III. The stone industry disappeared in the Second Period. After this we find nothing of importance in stone, except arrow and javelin heads, a few hammers, like those already described, and occasional belated flint flake knives. The effort to rival the easily-made metal tools was too great, and the trade in stone perished, except for instruments for which stone is especially suitable. Thus, the wrist-guards of archers (designed to protect the hand from the cut of the released bow-string) are almost always made of polished stone (fig. 31).

FIG. 31—ARCHER'S WRIST GUARD

IV. The flat axe is not wholly abandoned in this period ; but the normal celt is now the flanged axe. This is much more artistically made than the flat axe ; the bronze casters have by now learned how to manipulate the new material neatly. They have also found that it can be ornamented. No attempt is made to ornament the ordinary stone tools (with a very few exceptions), nor are the flat celts of the First Period decorated in any way. But the artificers of the Second Period found that pleasing devices could be scratched or punched on the surface of their handiworks, and accordingly we find the flanged axe-blades enriched by these means. Sometimes flat axes, unflanged (but made of bronze, and therefore Second Period), are similarly decorated : an example from Stoneyford, Co. Antrim. is figured JRSAI, xiii, 153. And even when giving the final hammering to the tools, designed to trim away the roughness left in the first casting, and to harden and consolidate the metal, the workman was careful so to direct his hammer-strokes as to make artistic patterns. Thus, the outer surface of the flanges is often beaten into a sort of rope-pattern, or into a series of little pyramids.

In shape the flanged axe-head resembles the flat
celt. Between the flanges there is an incipient stop-
ridge—a raised line running across the surface of the
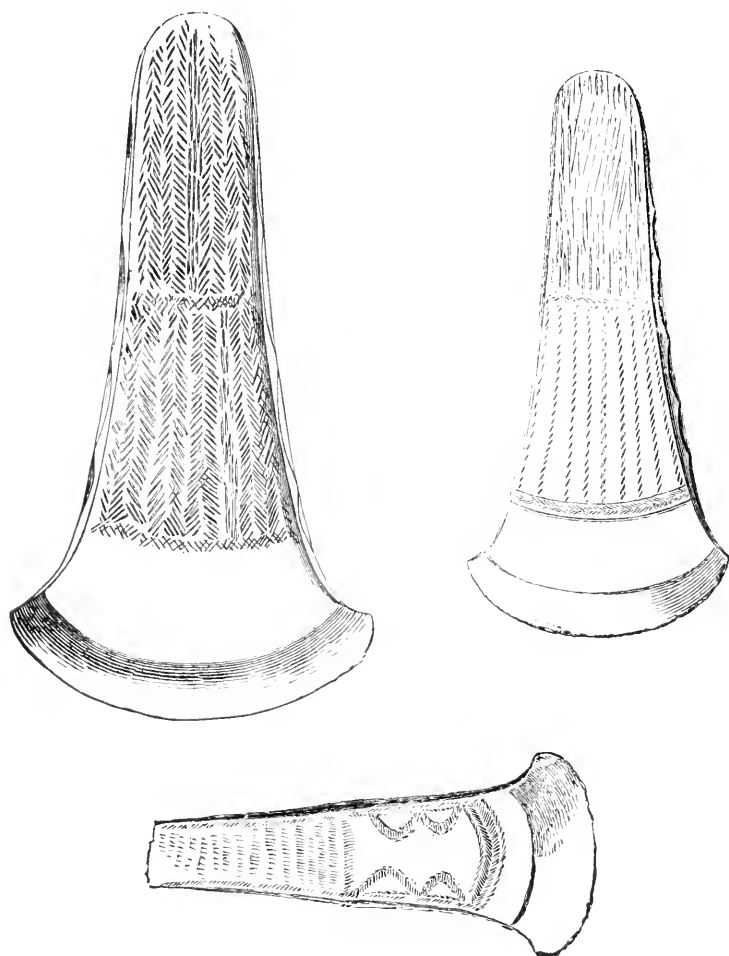
FIG. 32—FLANGED AXE-HEADS

blade, to prevent the axe-head being driven too far
into the handle. Both flanges and stop-ridge are at
first very slight, but they increase in size as their use-
fulness becomes more and more apparent.

V. The triangular dagger persists through the Second Period. The weapon is short, adapted for close hand-to-hand fighting. There is as yet no bronze spear-head; arrows and javelins, which are tipped with stone, are the only weapons made for fighting at a distance.

But the advantage of keeping an adversary at more than arms' length while perforating him with a dagger
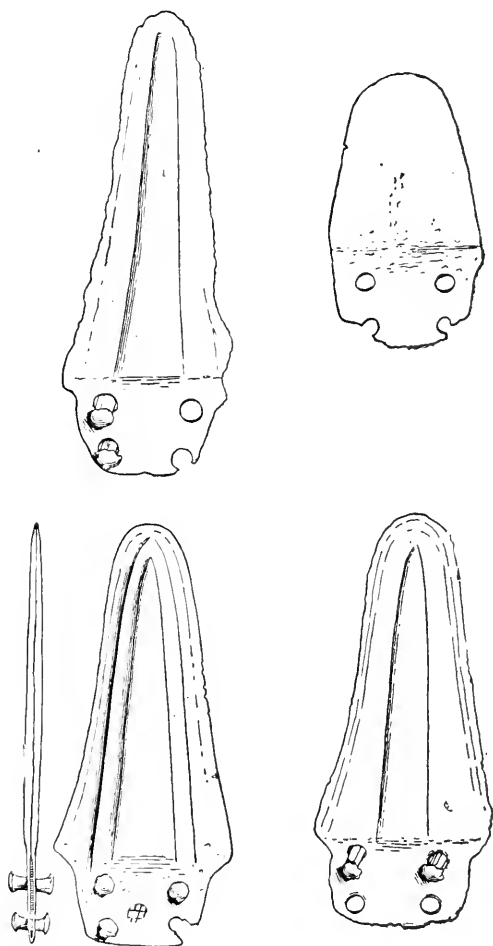
Fig. 31—Halberds

is so obvious that the men of the Second Period turned
their attention to the problem of how to attain this
desirable end.   Their first solution was to mount a
dagger at the end of a long handle, and at right angles
to its axis : in other words, to substitute a sharp-edged
blade for the heavy but comparatively blunt stone
casse-tête or hammer-axe.   Thus was invented a very
important weapon, the halberd (fig. 31).

The halberd spread over part of Europe at the
beginning of the Bronze Age, and the use of this
weapon forms an important link between Ireland and
Western Europe in the early part of the Bronze Age.
Representations of it are to be found in pre-historic
carvings in Northern Italy ; and specimens have come
to light in Spain, Ireland, Scotland, Germany, and
elsewhere.   In the earliest halberds, which not im-
probably belong to the Copper Age, the blade is small
and triangular—it is in fact identical in shape with
the ordinary riveted dagger.   From this, however, it
can be distinguished by the marks of the grain of the
wooden handle, which are frequently to be seen
impressed on the rusted surface of the butt of the
blade.   When these marks shew the grain at right
angles to the axis of the blade we have to deal with a
weapon which was mounted halberd-wise on its
handle.

The halberd became very prominent among the
weapons of early Ireland.   The blade in Continental
specimens remained comparatively small ; in Ireland
it was increased to a considerable size—some Irish
halberd-blades are almost as long as small swords.
The Irish type, moreover, assumes a peculiar scythe-
like shape, the blade being convex along one edge,
and concave along the other.   By this peculiarity
Irish halberds are easily distinguished from daggers
or rapiers, and can be identified as Irish (or, at least,
as of Irish type) whenever specimens are found in
other countries.

The halberd blades of this kind are almost pure
copper—another distinguishing feature, though this

cannot be determined except by chemical analysis. We might at first sight be tempted on this account to put the halberd-blades back into the First Period, with the copper celts. But we must remember that the absence of tin in Ireland made the alloy very expensive, especially at its first introduction, and that therefore it would be an almost impossible extravagance to make such large blades of bronze. At
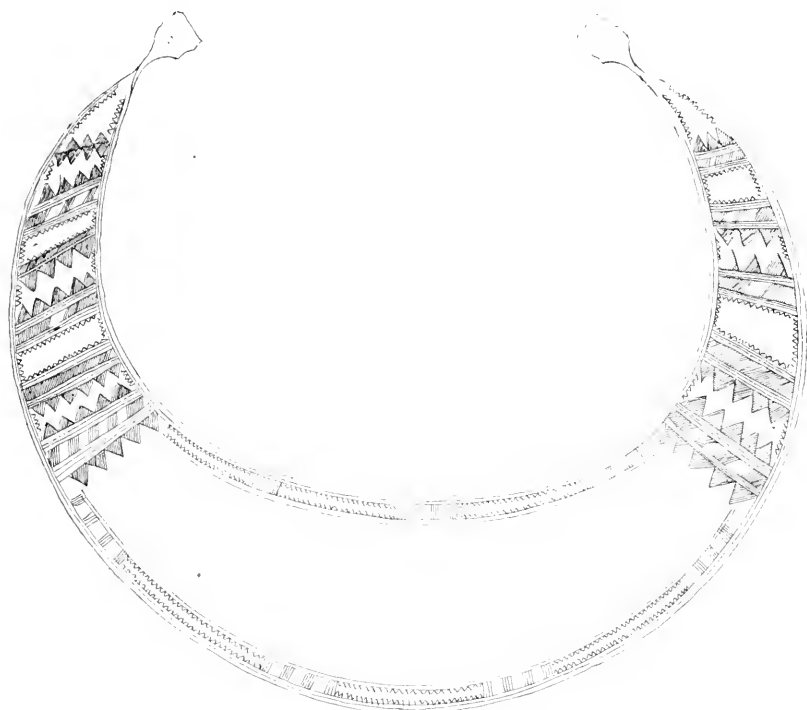
FIG. 34—LUNULA

Biorra, King's Co., a hoard was found containing some very slightly flanged celts and a halberd, all of copper. The flanges date the celts to the Second Period, their slightness and the metal used to the beginning of that period.[1]

[1] For an analysis of the types of Irish halberds see G. Coffey, *Irish Copper Halberds* (PRIA, xxvii, C, p. 94).

VI. The presence of gold in Ireland early made it available for decoration, and gave a stimulus to the development of ornament.   Already in the Second Period we met with an important type of gold decoration, the lunula.

This is a thin plate or film of gold, cut to a crescentic form.   The horns of the crescent terminate, in perfect specimens, in small discs, the plane of which is turned at right angles to the plane of the lunula.   The surface of the lunula is ornamented on one side with delicately engraved patterns (fig. 34).   These are always clustered on the horns of the crescent, which are usually covered all over with decoration, and extend in narrow lines along the edges of the broadest part, leaving the surface in the middle of the broadest part bare of ornament.[1]   This curious distribution of the decoration, which is the direct contrary to what we should have expected, has been ingeniously explained by Mr. Coffey as pointing to an origin for the idea of the lunula in the suspension of two chains of beads round the neck, which would hang loose and open in front, but would mass together on the shoulders.   For it is certain that the lunula was a form of collar :[2] the flat plates at the end of the horns were catches for securing a cord by which the lunula was prevented from slipping off.

The ornamentation of lunulae is invariably linear, consisting of triangles, lozenges, and other combinations of straight lines.   Dots are also used for purposes of enrichment ; but curved lines are never used.   The same is true of the ornamentation of flanged axes.

[1] If we may believe a rude woodcut in Vallancey's *Collectanea*, vi, 260, a lunula " found on the banks of the canal " was ornamented with a zigzag covering the broad part of the surface.   But it is probable that the thin plate of gold was crumpled, and that the fanciful Vallancey took the creases for ornament.

[2] The old idea that it is the *mind* occasionally referred to in the romantic literature, and that it was worn as a sort of diadem vertically over the top of the head, cannot be sustained.   The ornaments would not fit on the head in the manner suggested, and the dentification involves a monstrous anachronism.

Lunulae are dated by this identity of ornament, and by the fact that two lunulae were found in Cornwall associated with flat axes of bronze.
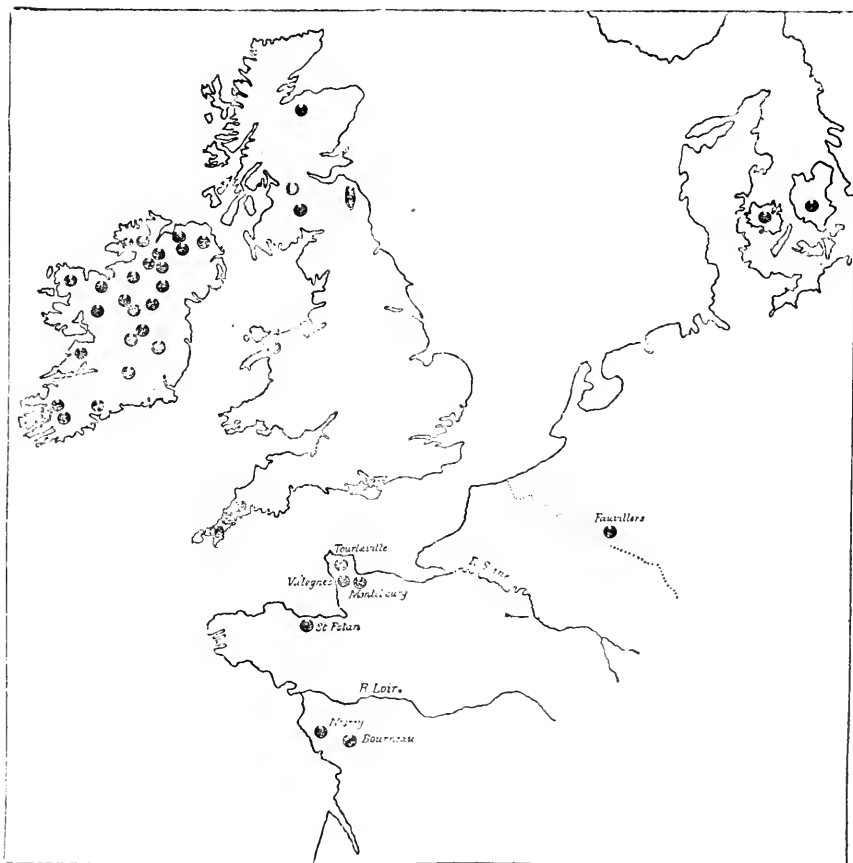
FIG. 35—MAP OF DISTRIBUTION OF LUNULAE

Mr. Coffey has drawn a map (fig. 35) shewing the distribution of lunulae,[1] so far as the provenance of the recorded specimens can be ascertained. It shews that this form of ornament is scattered all over Ireland,

[1] The same has been done independently by Mr. O. G. S. Crawford in the *Geographical Journal*, Vol. xl, (1912), p. 195.

but outside Ireland is rare, and as a rule is found only
in places easily accessible from Ireland.   It is quite
clear, therefore, that Ireland was the centre of distribu-
tion.   The specimens from Cornwall, just mentioned,
bear out what has already been said about the early
establishment of a trade with that region.
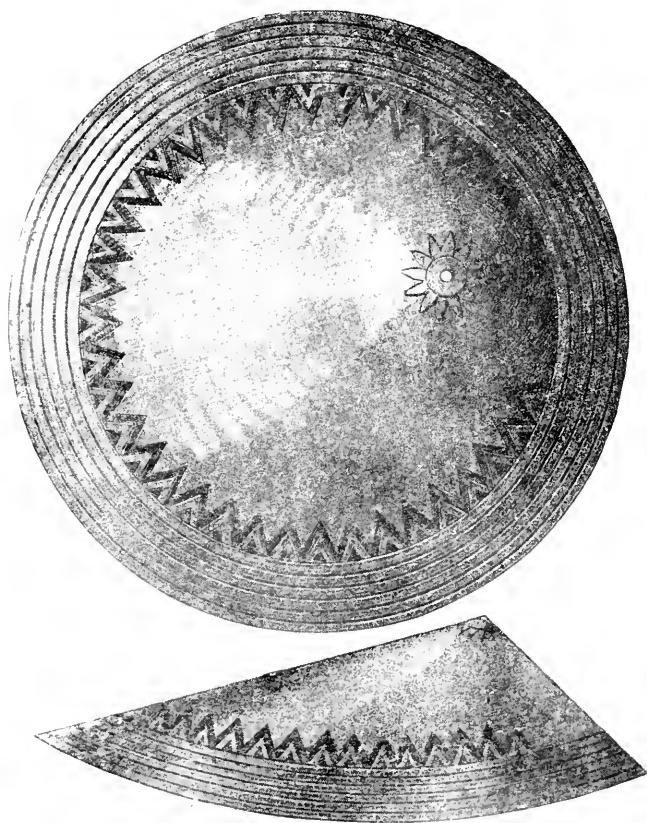
FIG. 36—GOLD ORNAMENT FROM THE BOG OF CUILLEANN

VII. The lunula is the most characteristic gold
ornament of the Second Period ; other gold objects
are, for the greater part, of a later date.   We may,
however, mention a peculiar ornament figured, but
not described, by Vallancey,[1] said to have been dug

[1] *Collectanea*, vi, plate xvi, p. 258.

up in the bog of Cuilleann, Co. Tipperary (fig. 36). This was a disc of gold, $4\frac{1}{6}$ inches in diameter, ornamented with concentric circles and a chevron pattern round the edge—the latter being the same kind of linear ornament as is found on the lunulae. The disc was pressed up into the shape of an irregular cone, perforated with a small hole at the apex. This shape is intentional, not accidental, as is indicated by the
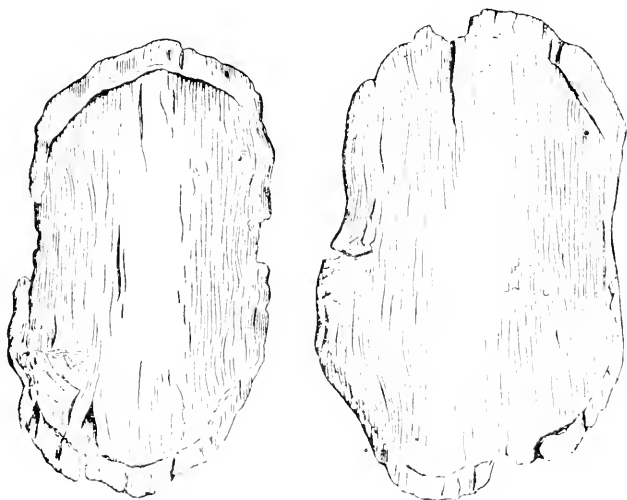
Fig. 37—Oaken Box for holding a Lunula

stoppage of the ornament on the steep side of the cone. As a specimen found at Newtown, Cros Domhnaigh, Co. Cavan, shews, the lunula when not in use was kept in an oaken box, cut to fit (fig. 37).

The Third Period

I. Though the flat flanged celt has not wholly disappeared, the palstave is the normal type of this period. It may have one or two loops at the side to hold the cord by which it was secured to the handle ;

or such loops may be completely absent.   The flange-less flat celt has quite vanished, and the socketed celts have not yet come into existence (fig. 38).
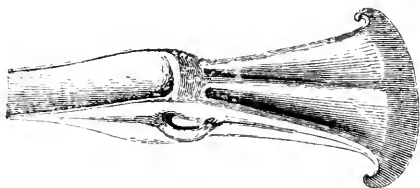
FIG. 38—PALSTAVE

II. The triangular dagger, without tang, and secured to the handle with rivets, still persists.   The blade is, however, of a different shape.   In the first two periods the blade of this form of weapon was rather short and stumpy.   It is now longer and narrower, and makes a much more effective weapon.   The blade is generally strengthened by means of a rib running down the axis on both sides.

The hafts of these weapons were normally made of bone or of wood ; and these materials being perish-able it is rare to find them undecayed.   In a few cases they were made of bronze, and sometimes these bronze handles remain, riveted to the blade.   But bronze hafts must always have been comparatively rare.   In fig. 39 we shew three examples of daggers retaining handles of bronze or of oak wood.[1]

But in addition to this survival of the triangular dagger, we find two new types of this form of weapon introduced, both of which are of considerable import-ance.   The first of these is the *triangular tanged dagger*. It is frequently spoken of as the Arreton Down type, from a place in the Isle of Wight where a typical speci-men was found.   It was not at first certain whether this was a dagger or a spear-head, but the question is now decided in favour of the former hypothesis.   But

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[1] A short list of weapons still retaining their original haft will be found in JRSAI, xii, p. 195.

the weapon is connected in an interesting way with
the spear-head : for the socketed spear-head developed
out of it, by a process not unlike the evolution of the
socketed celt.
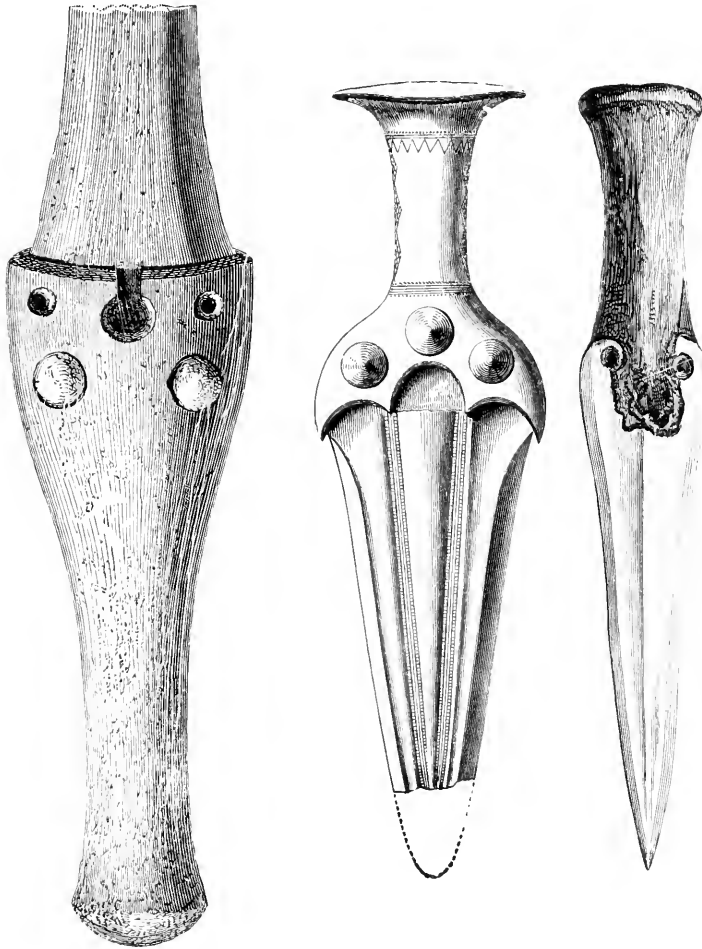
FIG. 39—HAFTED DAGGERS

This process was as follows (fig. 40). The tang of
the dagger was inserted in a handle, after the fashion
of a dinner knife. A ferrule was fixed round the lower

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end of the wooden handle, just as in a modern chisel, to prevent the wood from splitting. Such a ferrule was at first separate from the dagger ; but at last it coalesced with it, the tang was then suppressed, and
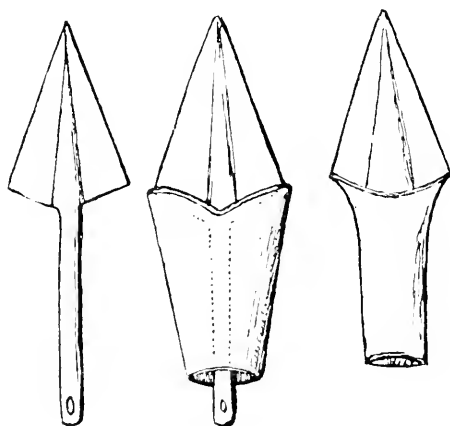
FIG. 40—EVOLUTION OF THE SOCKETED SPEAR-HEAD FROM THE ARRETON DOWN DAGGER

the socketed head was thus evolved, which, if fitted on a short handle, was a socketed dagger, and if fitted on a long handle was a socketed spear-head.[1]   This

FIG. 41—SOCKETED DAGGER

socketed tool *as a dagger* is already known in the Third Period ; it is the second of the two types of dagger just referred to (fig. 41).   Here, then, we come for the first time to the manufacture of socketed tools. At this point, where more elaborate problems in metal

[1] This development has been traced out in an elaborate paper by the Rev. Canon Greenwell and Mr. W. P. Brewis, entitled *The Origin, Evolution, and Classification of the Bronze Spear-head in Great Britain and Ireland*, published in *Archæologia*, lxi, 439.

casting meet us, it may be well to say a few words
about the moulds used by bronze casters in Ireland.

III. In the beginning, when nothing was made of
metal except flat axes and daggers, a sufficient mould
was a depression of the required shape in the surface
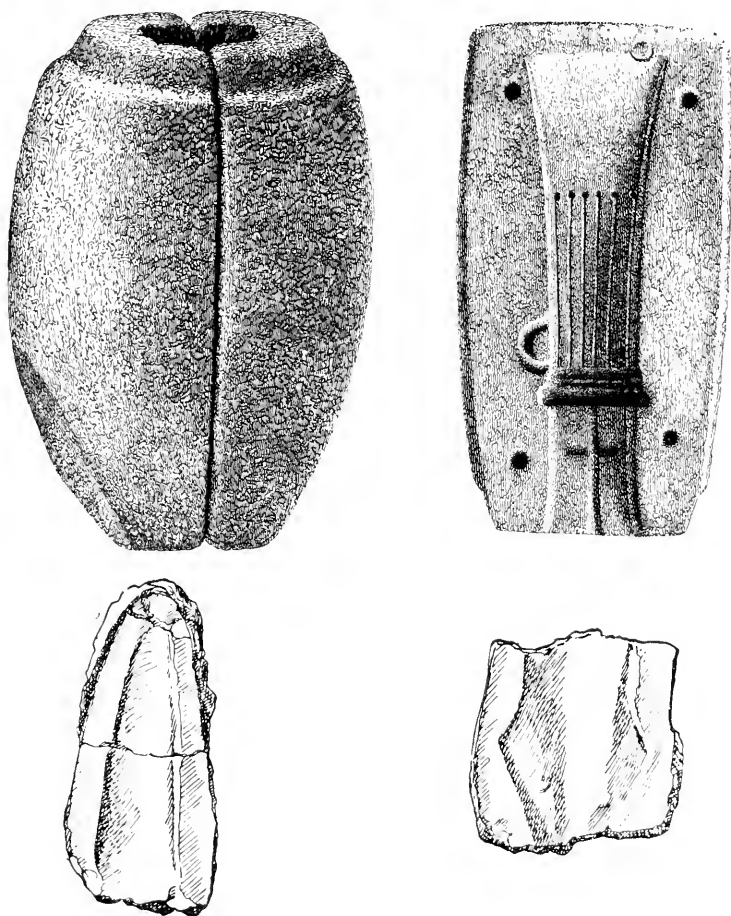
FIG. 42—MOULDS

of a stone, or even of the ground (fig. 29 *ante*). But
when ornament began to be applied, by casting,
to both sides of the implement, clearly a mould
for both sides would be required. Thus we

find the double mould invented, with two cor-responding indentations, and with a channel lead-ing to the hollow intercepted between the two halves of the mould. Mortices and tenons cor-responding to one another on the two faces of the mould kept them from slipping or from being mis-placed with reference to one another. The molten metal was poured in at the end of the channel, and, when it cooled, the moulds were taken apart and the implement taken out from between them. The knob of hardened metal that filled up the channel through which the molten bronze was poured into the mould was then broken off the implement ; such knobs are a constant feature of the deposits in bronze casters' hoards. The instrument was then completed by polishing and sharpening on a grindstone. Often multiple moulds are found, *i.e.*, stones bearing on all their sides indentations for casting different types of objects. Such moulds are of great value as indicating which types were contemporary. The existing specimens of moulds are usually made of stone, some-times of metal. A few fragments of clay moulds have been found in sandhill sites : two such will be seen in fig. 42.

When it was required to make a tool with a socket, a method was followed which may thus be described.[1] The mould was first filled with clay, which was allowed to dry and harden. When the clay was solid, its surface was carefully pared away till it became of the size of the interior of the intended socket, leaving a block at the butt end by which it could be supported in position inside the mould. A channel was drilled through this clay block for pouring the metal into the mould. The clay was then replaced in the mould ; the block at the top secured it in the right position, and the molten bronze was then poured into the space

[1] It has been deduced from the materials supplied by the hoards of bronze-casters, containing implements the manufacture of which had for some reason been suspended.

between the walls of the mould and the clay core—in
fact, metal was poured in to take the place of the
parings of clay removed from the outer surface of
the core. When the metal cooled it was taken out,
and the clay core picked out, leaving the empty
socket : the tool was then complete, except for its
final grinding and polishing.

IV. The lunula has now disappeared, and has given
place to the torque (fig. 43). The torque, strictly
speaking, is a *twisted* ring, though the name is often
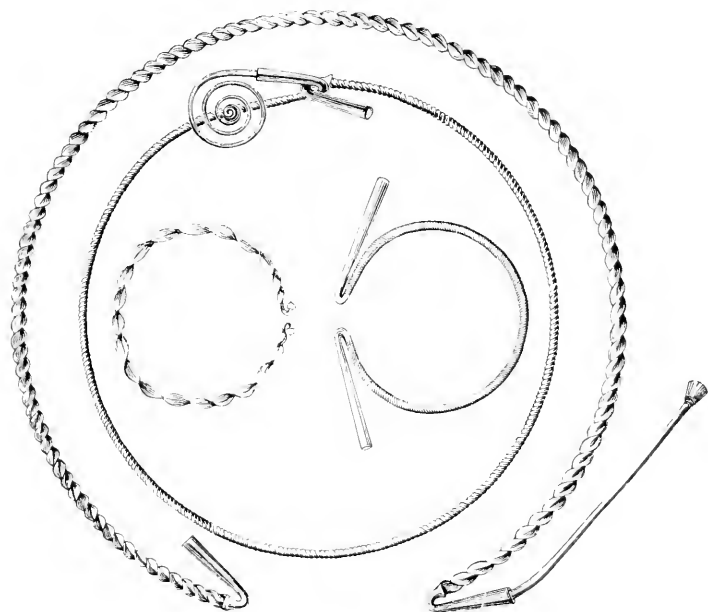
FIG. 43—TORQUES.

rather loosely extended to neck-collars that do not
display the characteristic twist. A torque properly
consists either of a bar of metal or of a ribbon-like
strip—it may be either bronze or gold—twisted like
a screw. It is supposed that the ribbon of metal was
secured between two bars of bronze, and that all were
twisted together, the bars being subsequently removed.
There are, however, several varieties of ornament

grouped together under the name torque.   Sometimes two ribbons were bent longitudinally into an L-shape, and welded, back to back, in this form ${}_\daleth{}^{L}$:   by this ingenious method a screw of four edges was obtained.   Sometimes wires are twisted round a bar of metal ; and sometimes the screw effect is obtained by engraving, not by twisting.   These last two varieties are probably of later date.   The screw, how-

Fig. 43A—Torques

ever made, was bent into a loop, and provided at the ends with hooks clasping into one another, thus making a collar.

Bronze torques are rare in Ireland : a broken specimen was included in the Annesborough hoard, referred to above, page 131.

Torques were as a rule ornaments for the neck ; but large torques exist which, if intended for human wear at all, must have been girdles.   The great torques found early in the last century at Teamhair (the two

outermost examples in fig. 43) were of this kind. It is not impossible that these objects were votive : there is some evidence that there was an ancient sanctuary close to the place where they were found.

VI. This is the place to refer to the Strangford Loch find, as it may be called, the story of which is instructive as illustrating the unsatisfactory means at present available for safeguarding monuments of antiquity.

About 1911 vague stories of a find of gold objects somewhere in Ireland began to be circulated among archaeologists here and in England. The place and circumstances of the find were most carefully concealed, to evade the law of treasure-trove ; and of what it originally consisted will probably never be known. A part of the hoard passed into the possession of a London dealer, who offered it to the British Museum. The Museum communicated with the authorities of the National Museum in Dublin, as the objects were Irish, before entering into negotiations with the dealer. There were some difficulties in the way of their acquisition, but that Gordian knot was cut by the generosity of Lord Iveagh, who purchased the lot and presented them to the National Museum.

We must now note of what this part of the find consisted (fig. 44). There were five small models of axe-heads, of the flat flanged type, beautifully made in solid and very pure gold, and ornamented with impressed spirals : two pins, one of which was ornamented with similar spirals ; but the other, of a late Iron Age type, could not have belonged to the original find, and must have been added to the lot by one of the persons through whose hands the find passed : a torque : a small bracelet : and a model of a shield, in a less pure gold than the other objects. The flat flanged axes are of Second Period type, but the hoard is not necessarily so old : indeed, it may be questioned whether the shape of the genuine pin, which is of a rare and a late type, does not make the Fourth or the Fifth Period a more suitable date.

FIG. 44—THE STRANGFORD LOCH HOARD

The find may be called the Strangford Loch find, because the first stories told about it localised in the neighbourhood of that inlet. Other stories were told later ; and careful enquiry round the loch gleaned no information whatever. In the absence of satisfactory information the name Strangford Loch will serve as a label for the find as well as any other.

After the acquisition of the objects persistent rumours now began to be circulated that the whole series were forgeries. A well-known collector wrote to say that he had purchased some pieces from the hoard, and that he was so certain that they were not genuine that he proposed to melt them down. Before doing so he kindly lent them to the Royal Irish Academy for inspection. They consisted of some silver ornaments, which were certainly forged : a number of small rings and bracelets of the torque type, of a common type, probably genuine : and four or five axes, very clumsily imitated from the genuine ones. These were unquestionably forged, and by the very badness of their execution they made the genuineness of the original series the more probable.[1]

With these data we can reconstruct the history of the find. It was probably made accidentally, in the course of agricultural operations. The hoard consisted of the axes (probably a necklace) and the shield, some torques, bracelets, pins, etc. Had the finders honestly offered them to the Royal Irish Academy they would have received a fair price for them, out of the Government Grant which is put at the disposal of that body for the express purpose of acquiring such objects as the permanent property of the nation, and of securing their perpetual preservation in Ireland. As it was, they most likely disposed of them to some

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[1] In describing these objects (PRIA, xxxii, C, p. 177) I quoted Sir C. H. Read as advocating the authenticity of these objects. He has now made it clear to me that he condemned them from the first, and I take this opportunity of expressing my sincere regret that through a misunderstanding I incorrectly interpreted his opinions.

travelling huckster, at probably half the sum which they would have obtained through the legitimate channels. The middleman, into whose hands they fell, sold one or two of the axes and some of the ordinary things first ; finding that the axes, being unusual objects, attracted special attention, he melted down a number of the more commonplace objects and made axes out of them, with the twofold purpose of increasing the value of his merchandise and of covering his tracks.

After this glance at the seamy side of Archaeology, we turn with relief to the find itself, or rather to the poor remnant which is left to us, to see what can be made out of it.

There can be no doubt that the axes are amulets, and that they represent a widespread European cult, one phase of which is the Cretan worship of the double axe. This cult has its roots far back in the mind of primitive man. The massive hammer-axe was his most deadly weapon. With it he subdued his enemies, and slaughtered wild and monstrous animals. There must surely be a god in it, we may suppose him thinking, which made such wonders possible. So these little objects have a very long ancestry behind them.

The shield is especially interesting. No shield has survived to us from the earlier period of the Bronze Age. It is probable that these defences were then made of wood or of leather. We have, however, shields of bronze, wood, and leather both in Ireland and in Scandinavia dating from the end of the Bronze and the beginning of the Iron Age. These shields are circular, and are ornamented with various patterns. The patterns are symmetrical, but it is curious that at one point in the circle the symmetry of these patterns is often broken, without any apparent reason. It has been ingeniously inferred from this that there was an earlier form of shield having an observation-notch cut in the circumference, to enable the wearer to peep out without exposing himself more than was absolutely necessary ; and that the breaks in the

patterns on the later shield are like the vestigial organs of which biologists tell us—-the relics remaining in the higher forms of life of functional organs belonging to the lower forms of life out of which they have evolved.   No actual shield has come to light with such a notch ; but it appears in the model before us. The shield is further perforated with four holes in a row, as though for receiving a strap ; and it is ornamented with faintly incised linear ornaments and spirals, over which another series of spirals has been stamped.

THE FOURTH PERIOD

I. In the Fourth Period, which is the time of transition—from the cruder stages of civilisation in the earlier periods to the comparatively high standard of the fifth—the palstave still persists.   It is, however, giving place to the winged celt, in which the stopridge, having attained its maximum size, begins to disappear.   Towards the end of the period the socketed celt begins to come into use.   The earlier forms of celt are rare, if, indeed, they are used at all.
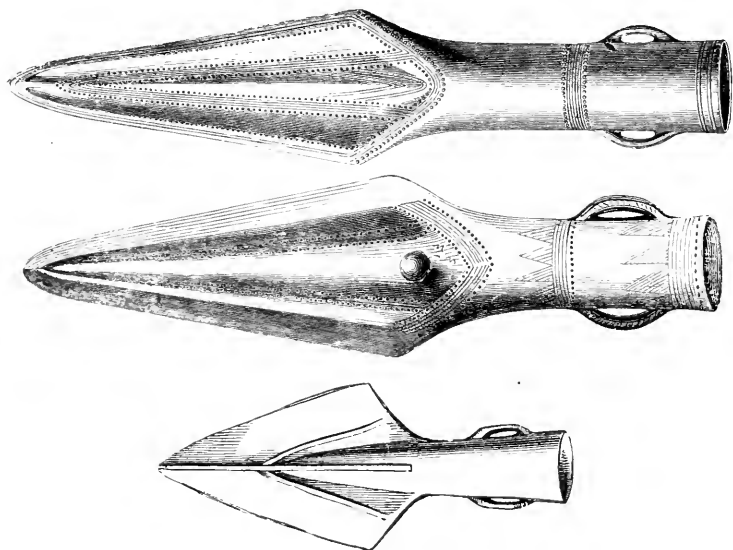
FIG. 45—SOCKETED SPEAR-HEADS

II. The socketed spear-head makes its appearance in this period. It develops out of the tanged dagger of the Arreton Down type, in the manner described on a previous page. Loops are provided either on the sides of the socket or under the wings of the spear-head, for thongs by means of which it was secured to the shaft. The wings of the spear-head are strengthened with ribs, the design of which is often very artistic.

In fourth-period spears, the head was secured to the shaft by means of cords passed through loops
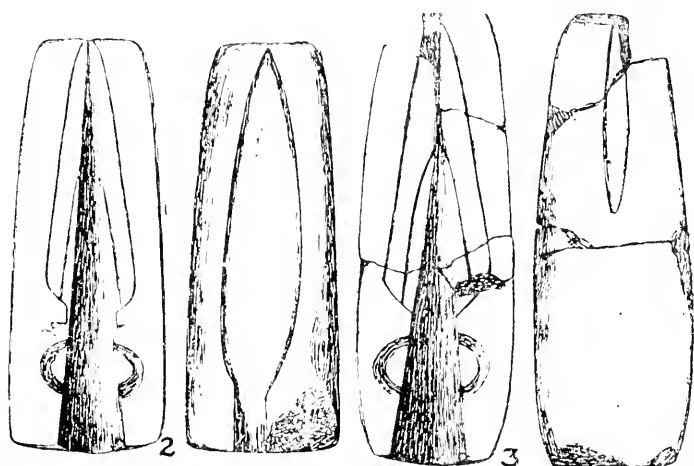
FIG. 46—MOULDS FOR CASTING SOCKETED SPEAR-HEADS

cast in the sides of the socket. The moulds shew that these loops were cast in a semicircular form, and then, in finishing the tool, hammered flat. The hammering was always artistically done, so as to give to the outer surface of the loop a lozenge-shape. Occasionally, though not often, it is decorated yet further : thus in a spear-head found at Cathair Mór, Ros Cairbre, Co. Cork,[1] the outer surface is decorated with a saltire.

The butt end of a spear-head was protected with a ferrule, commonly socketed, but occasionally provided

[1] Figured in *Journal*, Cork Hist. and Arch. Soc., 1899, p. 200

with a tang.   A bronze terminal of this description, with a pointed end and provided with a square tang, was found near the hill of Teamhair.   It is described as being nearly 3 inches in length.[1]   This object is, however, most probably Iron Age : similar ferrules were found at the iron-age settlement of La Tène in Switzerland.

The side loops began to creep up the socket, if we may so express it, as evolution advanced.   At first they were about midway between the base of the wings of the blade and the rim of the socket.   In all cases but one, they are exactly opposite one another : the one exception is a fine spear-head of unrecorded provenance in the R.I.A. collection (fig. 47), in which the loop on one side is close to the wing, while that

FIG. 47—SPEAR-HEAD WITH THE LOOPS UNSYMMETRICALLY PLACED

on the other is about three-quarters of the way down between the wing and the rim of the socket.   When the fourth period passes into the fifth the loops have risen up the socket till they are immediately under the wings ; indeed they are generally so designed as to be a continuation of a strengthening rib running down the blade.   Spear-heads of this form are among the most artistic weapons extant.   Finally, in the course of the fifth period, the loop actually enters the blade, and appears as an opening in the wing, which is little more than mere ornament : for the spear-head is now secured to its shaft by means of a rivet passed through a hole provided for its reception.[2]

III.   But it is the development of the tangless dagger which is of special importance in this period.   We saw

[1] A. G. More, *On an ancient bronze implement found near the Hill of Tara*, PRIA, xv, 25.

[2] For a study of the types of Irish Spear-heads see G. Coffey, *Notes on the Classification of Spear-heads of the Bronze Age found in Ireland*.   PRIA, xix, 486.
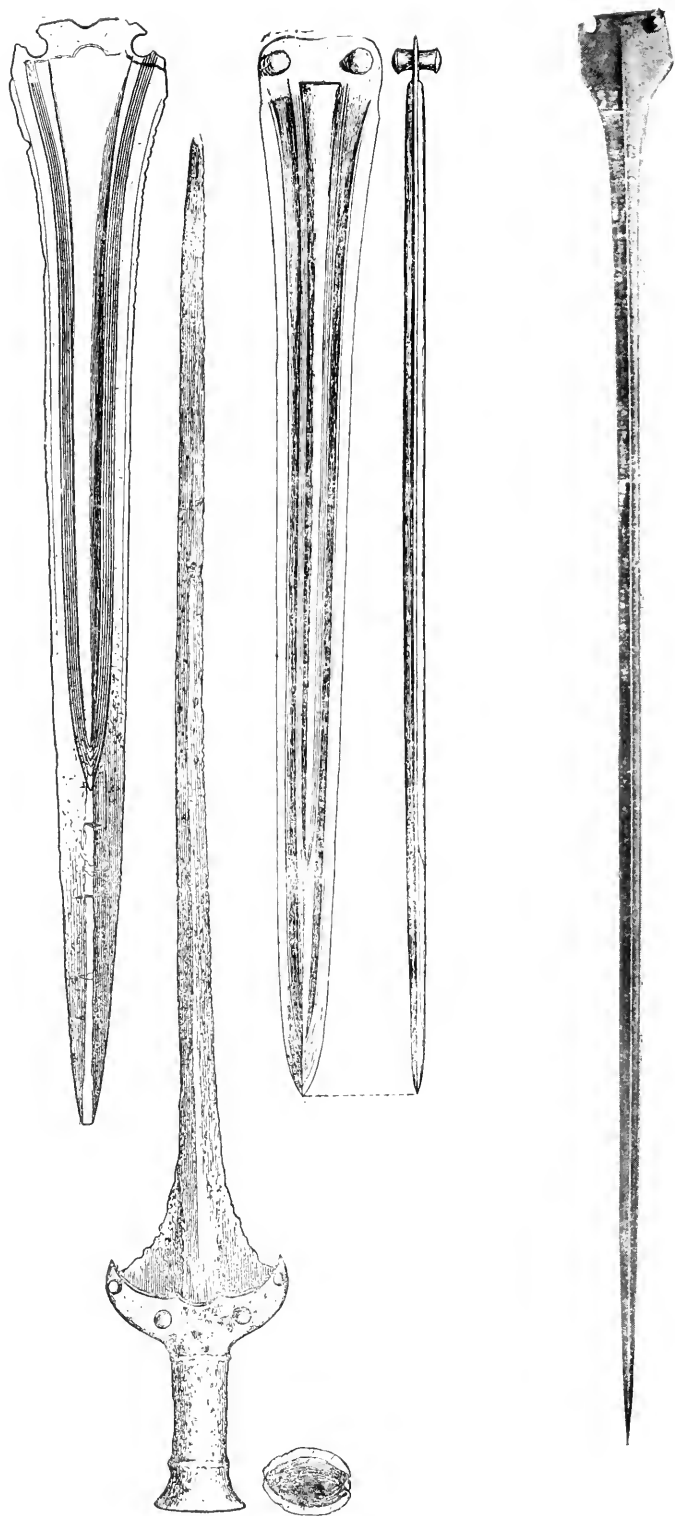
FIG. 48—RAPIERS

it in the First Period as a stumpy triangular blade, which in the Second Period gave birth to the halberd. In the Second and Third Periods we see the blade gradually lengthening and narrowing. In the Fourth Period it becomes so long that it can no longer be called a dagger ; we now have the *rapier* developed (fig. 48). At much about the same time a parallel line of evolution leads to the *sword*. The difference between a rapier and a sword lies in this, that the rapier is essentially a thrusting weapon, while the sword, though in the Bronze Age it is brought to a sharp point and can be used for thrusting, is essentially a cutting weapon with sharp edges. These two weapons, and the socketed spear-head, are the most important contributions that the Fourth Period makes to the armoury of the warrior.

The finest bronze rapier in existence is the wonderful specimen found at Liosán, Co. Derry, which is nearly 3 feet long and only three-fifths of an inch across. It was secured to its handle with two rivets. This triumph of the bronze-caster's art is now to be seen in the Royal Irish Academy's collection, which contains other examples of the same class of weapon, among them a splendid example from Inis Ceithlinn.[1] A representation of the Liosán rapier will be found in fig. 48.

IV. The sword of the Bronze Age has a gracefully curved blade, narrow towards the hilt, widening below, and then contracting again to a sharp point (fig. 49). The handle is usually a flat tongue of metal, projecting from the blade, and flanged for the reception of plates of bone or some such material, which were secured by means of rivets. It is uncommon to find swords with their hafting-plates remaining undecayed ; the well-known sword from Muc-shnámh, Co. Monaghan, once in the Day Collection, but now happily preserved in the Royal Irish Academy's

[1] See G. Coffey, *An Account of Rapiers and Early Swords of the Bronze Age*, PRIA, xxx, C, 88.

FIG. 49—FOURTH-PERIOD SWORDS
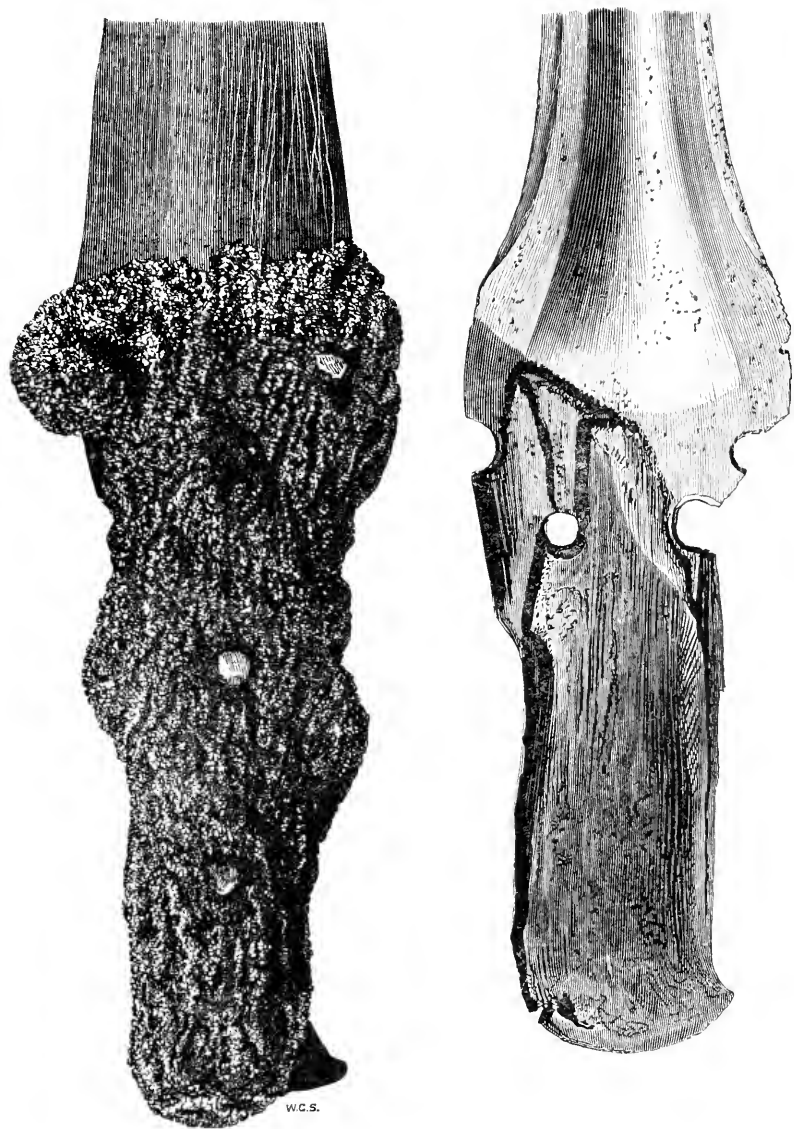
FIG. 50—HAFTED SWORDS

Museum, is a good example.   The hafting-plates are
in this case said to be made of bones of a whale.   A
rapier similarly hafted was found in the townland
of Gall-bhaile, Co. Tyrone, in 1864 : and another
sword in Co. Monaghan.   The two latter are shewn
in fig. 50.

V. The invention of a sword involves the invention
of a scabbard.   The edges of a sword have to be pro-
tected from injury to themselves, or from inflicting
hurt on such people as they are not intended to hurt.
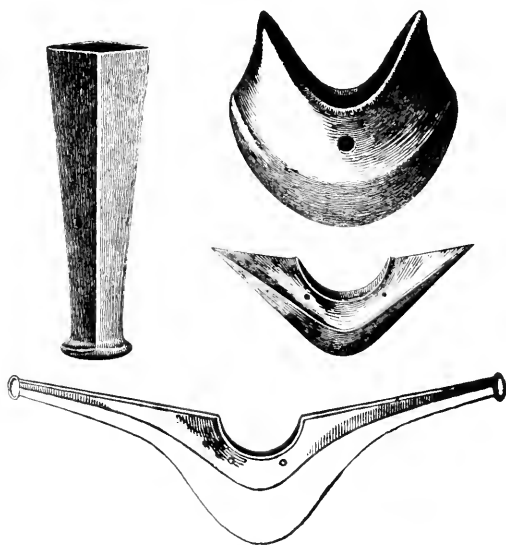
FIG. 51—SCABBARD-TIPS AND MOUNTS

It is, however, rare to find a sword-scabbard of metal
throughout its length from bronze-age deposits.
Scabbards of this period were made, we may presume,
of leather, tipped at the point with metal.   Naturally
it is only these metal tips (called " chapes ") which
have survived (fig. 51).   Chapes, as Dr. Montelius
has shewn,[1] are of considerable chronological import-
ance.   The earlier chapes are as a rule of smaller size :

[1] In his paper on British Bronze Age Chronology, *Archaeologia*,
vol. lxi, p. 97.

those of the Fifth Period become extravagantly large, with projecting points corresponding to similar projections at the base of the hilt. The purpose of these projections is probably to serve as a foot-purchase in drawing the sword from the scabbard.

Sword scabbards being thus as a rule made principally of leather, we can hardly expect that any part of such objects should survive the corrosion of time, with the exception of the metal mountings of the top and the bottom. But they were occasionally made of
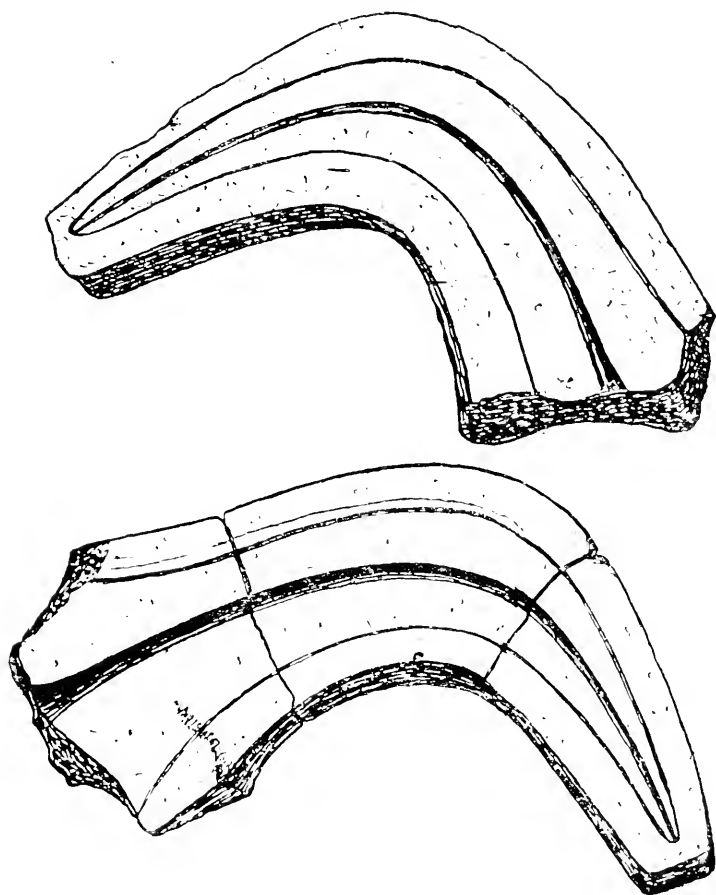
FIG. 52—MOULD FOR CASTING SICKLES, COILL NA MADAIDH.

bronze ; fragments of one sword-scabbard of bronze
were identified in the hoard of waste scraps from Co.
Roscommon referred to above, page 131.[1]

VI. The activity of the bronze caster in Ireland is
illustrated for us by his moulds of stone, which have
been found in considerable numbers ; shewing that
although the tin had to be imported the metal was
fused and cast into shape by native craftsmen.   Special
mention should be made of a remarkable find of moulds
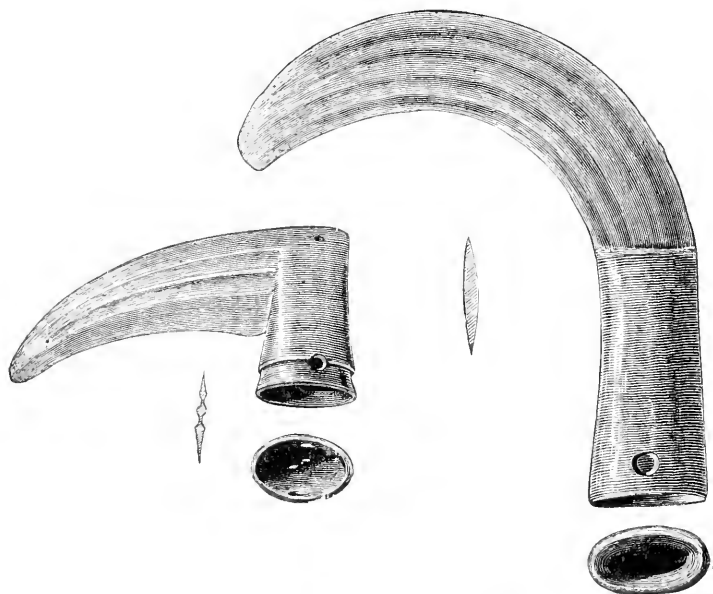
FIG. 52A—SICKLES

made at Coill na Madaidh, Co. Antrim, which has
been described by Mr. Coffey.[2]   These included
moulds prepared for casting looped socketed spear-
heads, which dates the find to the Fourth Period.
Most remarkable was a mould for casting a sickle
without socket.   According to Mr. Coffey, " Up to
the time of its discovery the only sickles known in

[1] See JRSAI, xv, p. 267.
[2] G. Coffey, *Recent Pre-historic Finds acquired by the Royal Irish
Academy : an important find of Moulds in Co. Antrim.*   PRIA,
xxx, C, p. 83.

Ireland were those furnished with a socket.   No moulds of any description had been found.   In Britain, though the type without the socket has been found, it is rare, and mostly confined to the western counties. On the Continent, the sickles without the socket are the prevailing type, though a few socketed examples have been found in the north-west of France."   Two specimens of Irish socketed sickles are shewn in fig. 52A

I. The Fifth Period of the Bronze Age in northern Europe is contemporary with the First Period of the Iron Age in southern and eastern Europe.   There were doubtless influences working indirectly from South to North during the 400 years for which this period lasted, which had something to do with the great advance in civilisation made during that time. But these influences did not extend to the introduction of the use of iron ; and therefore the part of Europe with which we are here concerned is still counted as being in the Bronze Age.

II. If a civilisation can be gauged by the amount of specialisation which its products display, the Fifth Period of the Bronze Age shews a great advance over the preceding stages, not excepting the Fourth.   To begin with the weapons and implements inherited from the Fourth Period, we still have palstaves and winged celts, but the socketed celt is the normal type (fig. 53).
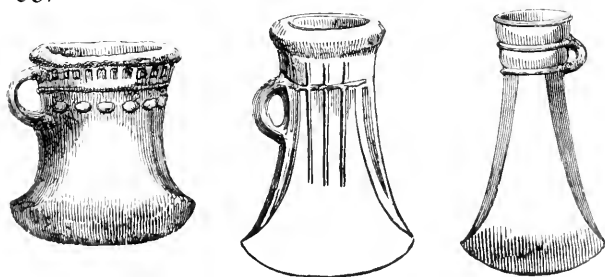
FIG. 53—SOCKETED CELTS

The socketed spear-head persists ; many specimens of this class of weapon are of great artistic beauty, bearing ornamental ribbing and apertures cut in the wings, enhancing the ornamental effect (fig. 54). The ornamental perforation of the blade is a vestigial relic of the side-loops of fourth-period spear-heads. Sometimes the opening is strengthened with flanges, as in an example figured in the *Journal* of the Cork Historical and Archaeological Association, 1901, page 122.[1] The place of the side-loops, for securing the head to the shafts, is now taken by rivet-holes, by means of which a pin could be driven through the shaft, securing the head.[2]

Rapiers disappear, for the obvious reason that the sword, which can thrust as well as cut, is a more useful weapon than the rapier, which can thrust only. The Fifth-period swords (fig. 55) resemble those of the Fourth Period, but can be distinguished from them by a nick cut on the edge just below the handle. This nick is probably meant to blunt the edge at that spot, so preventing the hand from being wounded if it should happen to slip in grasping the sword. Daggers, tanged and socketed, are still found. A specimen from Scol, Co. Cork, is figured in the Cork Historical and Archaeological Association's *Journal*, 1905, page 186.

III. The following instruments added during the Fifth Period may be enumerated :—

Razors (fig. 56) : fine blades of bronze either single or (more commonly) double, with a rib backing and supporting them. The rib is prolonged into a tang for grasping the instrument ; the tang is not infre-

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[1] This specimen retains a fragment of the wooden shaft. The paper describing it has some quite unintelligible speculation as to how the shaft was secured in the socket.

[2] Very few specimens of spear-heads containing the rivets have come to light. Probably the rivets were made of wood, not of bronze. They would naturally be made easily removable, as it would often be important, in the stress of battle, for the owner to be able to remove his spear-head from a broken shaft and fit it on to a new shaft, at a moment's notice.
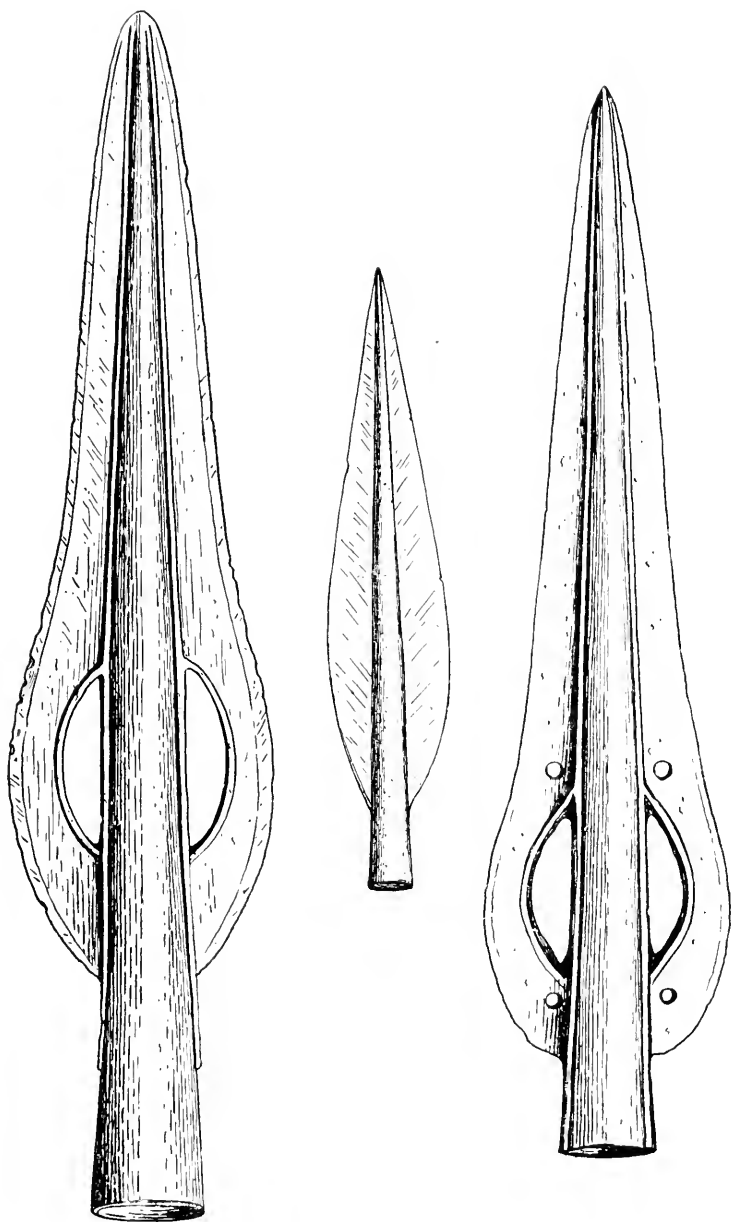
FIG. 54—FIFTH-PERIOD SPEAR-HEADS
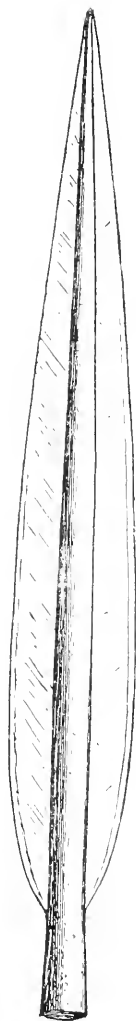
FIG. 54A—FIFTH-PERIOD
SPEAR HEAD
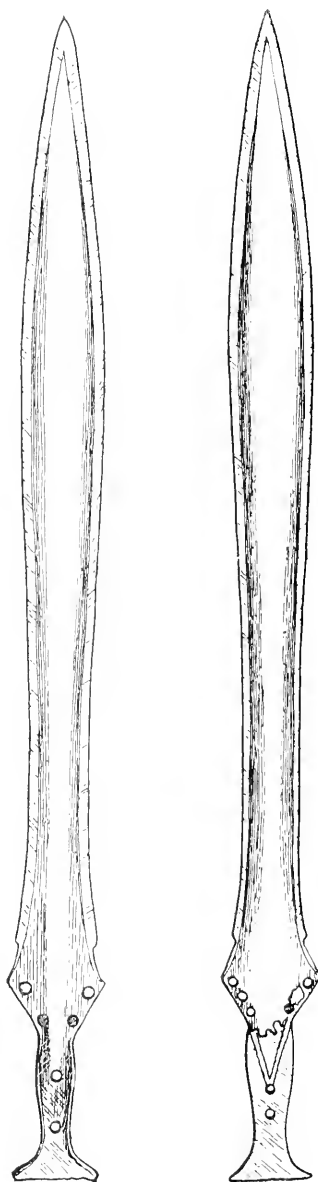
FIG. 55—FIFTH-PERIOD SWORDS.

quently perforated for suspension. The Airthear Maighe find, described below, contains a razor in its original leather case.
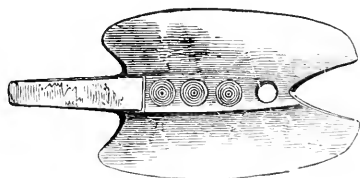
FIG. 56—RAZORS

Gouges : these are modifications of the socketed celt, with a concave edge substituted for the straight edge of the celt. The instrument as found in Ireland is almost always of small size, with a narrow socket. The derivation from the socketed celt is proved by the extreme rarity of other than socketed gouges : there is but one tanged gouge in the great collection of the Royal Irish Academy. An example will be seen in fig. 61, No. 2.
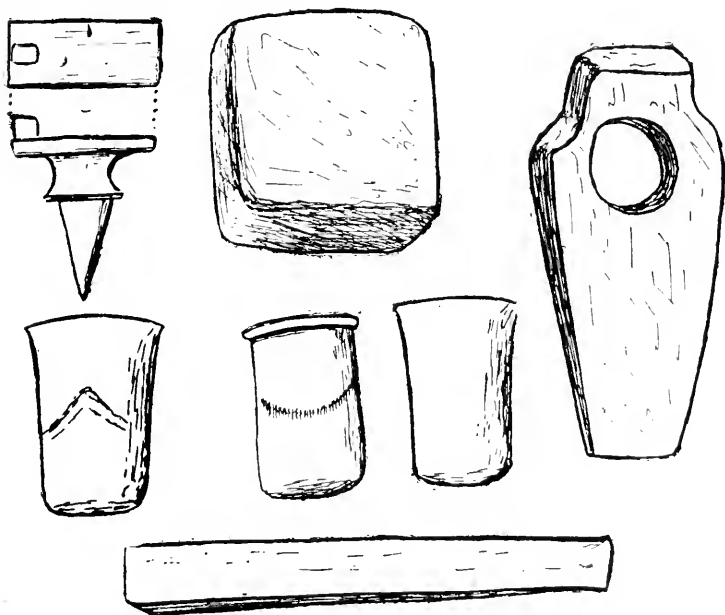
FIG. 57—GOLDSMITHS' HAMMERS, ANVILS AND PUNCH

Goldsmiths' Hammers (fig. 57): resembling small socketed celts with a flat butt taking the place of the edge.

Goldsmiths' Anvils (fig. 57): These may take the simple form of a more or less cubical block of bronze: an example of this type, found in the neighbourhood of Sligeach, is figured JRSAI, xvii, p. 538. It is described as having a small particle of gold embedded in the upper surface, indicating the use to which it has been put. More elaborate types of anvils exist, consisting of small tables of bronze with a spike below for securing them to a board. Some have a spike projecting sideways upon which small rings could be hammered into shape.

Chisels (fig. 58): which, unlike gouges, are usually tanged. A shield is provided to prevent the tang from being driven too far into the wooden handle:
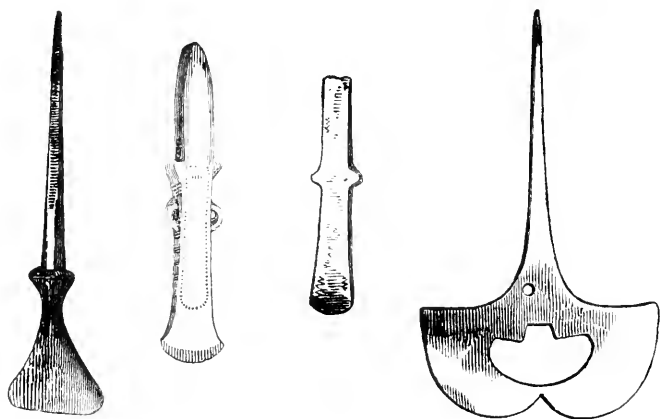
FIG. 58—CHISELS AND LEATHER-CUTTERS' KNIFE

sometimes two projections, one on each side of the stem, take the place of the shield.

Leather-cutters' knives (fig. 58D): As such is probably to be explained a peculiar blade with tang projecting from the back, found in the Sinann.

Trumpets and *Cauldrons* of bronze are frequently found in Ireland, but as these most probably belong

to the early stages of the Iron Age we do not describe them in the present volume.

IV. *Shields*, however, can be mentioned most conveniently here. Though shields were no doubt used much earlier than the Fifth Period, metal shields of an earlier date are not known in Ireland. The normal type of metal shield, circular and ornamented with concentric bands of knobs, with ribs between in repoussé work ; they most likely belong to the period of transition between the Bronze and the Iron Ages.
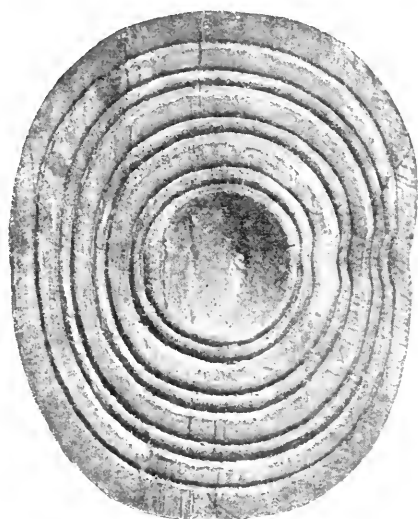
FIG. 59—SHIELDS.   A

A fine specimen, now in the R.I.A. Museum, from a bog near Loch Gair, Co. Limerick (fig. 59 C.), may be specially referred to. Of shields in materials other than metal we may refer to one said to be in alder-wood, from Co. Leitrim (fig. 59A), and another in leather from Cluain Bhrain, Co. Longford (fig. 59B). Both these shields display the remarkable interruption in the symmetry of the ornamental pattern which, as

Fig. 59—Shields. B
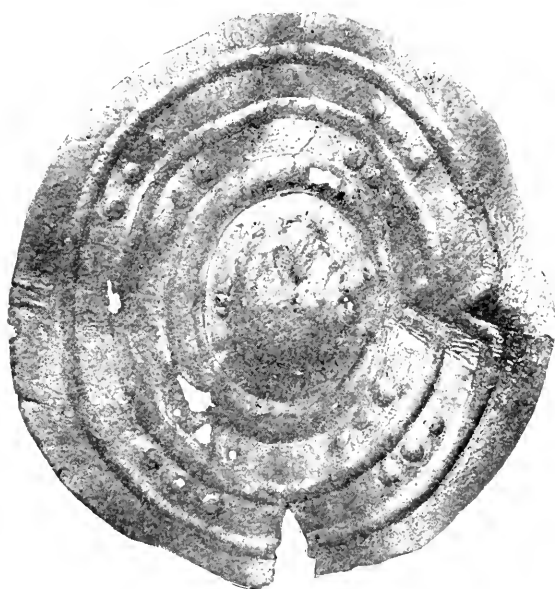
Fig. 59—Shields: B[1]

FIG. 59—SHIELDS.   C

FIG. 59—SHIELDS.   C¹

has already been said, is a survival of the observation-notch that must at one time have been made in the edges of shields.[1]

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[1] It is right to mention a possible alternative explanation of this interruption of the ornament : the widespread superstition against unbroken rings, on which see J. G. Frazer, *Taboo and the Perils of the Soul*, p. 313, *et seqq.*

V. This is also the period of long ornamental pins in bronze, with wide circular heads bent at right angles to the shaft. Such a method of treating the head has the advantage of giving a wide surface for decoration, and displaying it to the full without inconveniencing the wearer. A fine specimen formed part of an interesting hoard of objects found in a bog at Airthear Maighe, Co. Antrim, and now in the Royal Irish Academy's collection. It includes a socketed celt, and a flat-headed pin—these date the find to the Fifth Period. There were also a socketed gouge and a razor : the delicate edge of the latter was protected by a sheath of leather Most remarkable of all was the woollen garment in which these objects were wrapped, and which had been preserved from total destruction by the antiseptic action of the peat. This cloak was ornamented with a fringe of horse-hair of elaborate workmanship, which merits and repays the closest scrutiny. It gives us a very high opinion of the ingenuity of the artificers in textiles of the fifth period of the Bronze Age.

VI. Some important types of objects in gold are probably to be referred to the Fifth Period. Chief among these is that mysterious object which can best be called the *cupped ring* (it is often called a *fibula*, which is misleading).

The cupped ring is a bar of gold, bent into the shape of a horseshoe, and terminating at each end in conical cup-shaped expansions. There is no general explanation of this type of object that will fit every example of it. Some of them may be bracelets, but others would not fit on any human wrist : there are specimens of the type too small even for finger-rings. Some of the most minute of these rings do not possess the cups. These small rings are frequently known by the name " ring-money." Occasionally specimens are found consisting of bronze gilt. Of the larger cupped rings some may be the fasteners of cloaks, the cups buttoning into loops on each side of the cloak, so that the whole ornament resembles the

FIG 60—THE AIRTHEAR MAIGHE HOARD
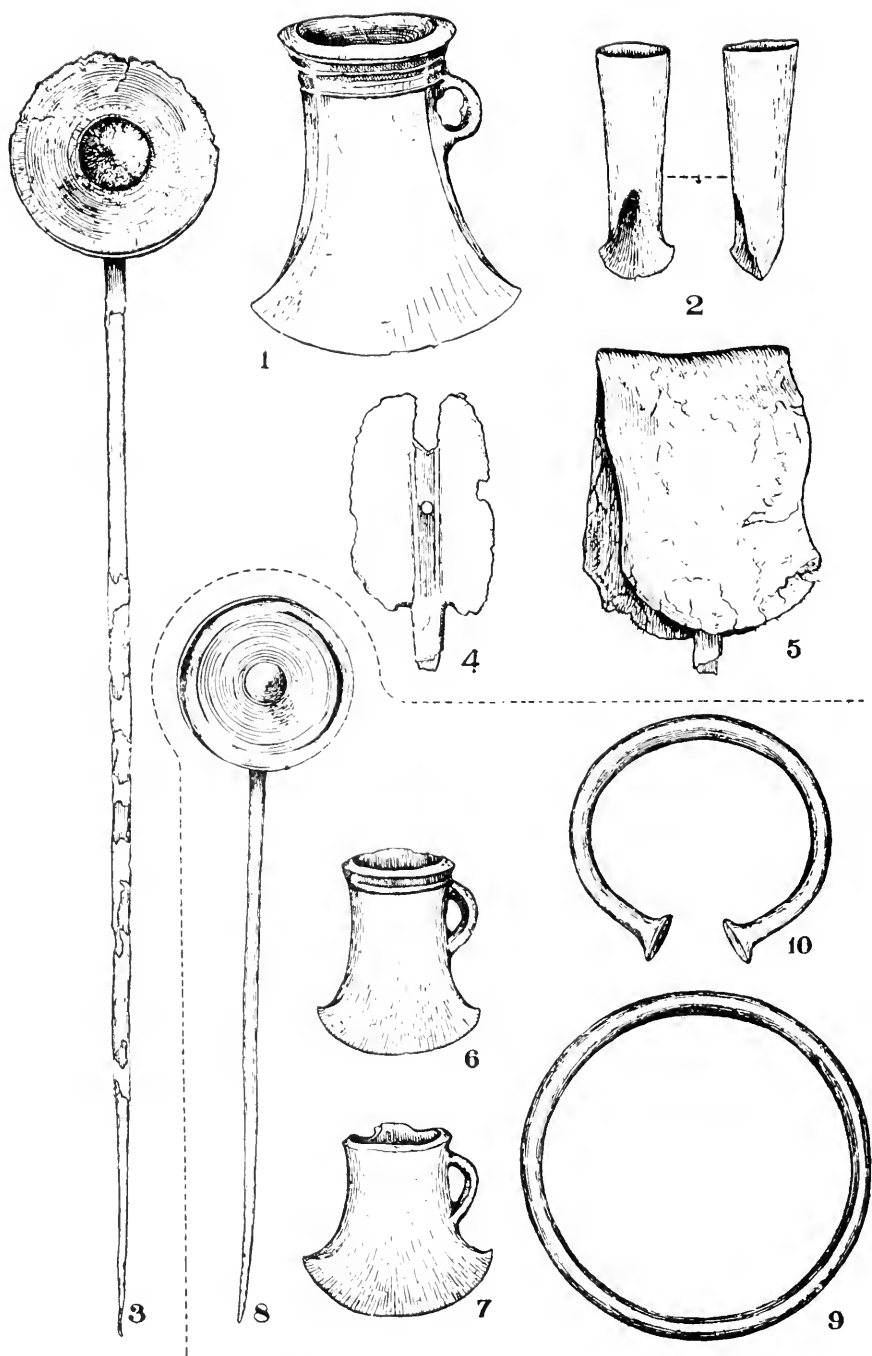
FIG. 61—THE AIRTHEAR MAIGHE HOARD.   (Nos. 6–10 from Tulach, Co. Clare)

morse of a cope ; but then others are so heavy
that they could not be worn in the way suggested
with any comfort. It has been supposed that these
objects, which are found in so many different shapes
and sizes, are a primitive form of currency, and I
am strongly inclined to favour this idea. Before the
introduction of coined money, which we owe to the
Scandinavian kings of Dublin, the media of exchange
were gold, cattle, and slave-girls—this we learn from
the Irish Law tracts, which further make it clear
that the relative value of these three commodities
varied from time to time, and with the condition
of the animals and the slaves. For the payment of
sums of money in gold weight, or whatever standard,

FIG 62—CUPPED RINGS

it would be convenient to have the ingots in a weigh-
able shape, and in such a form that they could be used
as ornaments. It is a curious coincidence that bronze
rings in all respects similar to these are or have till
recently been used as a medium of currency in parts
of Africa. One of the Irish cupped bracelets, illustrated
by Vallancey, bears an Ogham inscription, but this
is undoubtedly a forgery. As a rule these objects are
plain, with little or no decoration : but Vallancey [1]

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[1] If these objects had the use suggested, their weights must
necessarily conform to some fixed standard—though it is not to
be expected that they would be as accurate as modern mechanical
refinements could make them. Materials for the study of the
metrology of Irish gold ornaments have now been put at the dis-
posal of students by Mr. Armstrong's *Catalogue*, already cited
(p. 120 *supra*). I have tabulated all the weights of the cupped rings
there enumerated, and (though the full calculation cannot be
printed here) find evidence of two standards, respectively, of the
approximate values of 15 and 20 oz.

M
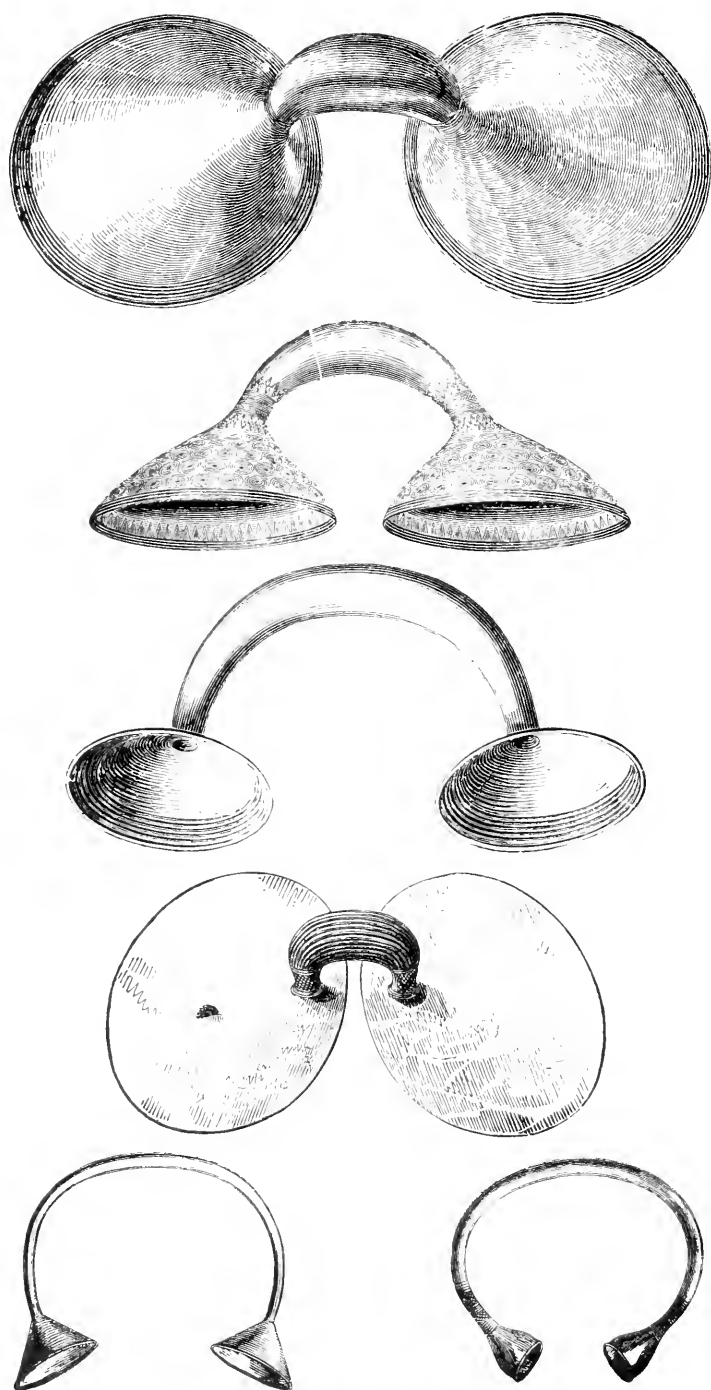
FIG. 62A—CUPPED RINGS

illustrates (from a drawing by a silversmith of Ath Luain called Nowlan) an unusually ornate specimen. This was found somewhere in Co. Galway, and ultimately sold for 52 guineas (its weight in gold) to a Dublin jeweller, who melted it down. On the convex side of the cup there were twelve circles, concentric with the outline, inside of which were little triangles. There was also a band around the base of each cup.

A very interesting description of the technical processes followed in the manufacture of an object of this type was contributed by Mr. Edmond Johnson to the *Proceedings* of the Royal Irish Academy.[1] This analysis, the work of a man of practical experience in the art of the goldsmith, gives us a high opinion of the technical skill of the ancient craftsmen. The object described is made in five separate pieces—the bow, the two cups, and the rims of the cups. The gold was probably melted in a charcoal fire, which alone would give sufficient heat with the means at the artificer's disposal. The bow was formed straight first, and afterwards bent into the curved shape.[2] It was shaped in a mould cut to the tapering form of the bar by a hammering process known as *swaging* ; the hammer being applied, not directly to the gold, but to a stone similar to, but smaller than, the mould, and with a corresponding hollow cut in it. By striking with a hammer on the smaller stone, known as the *swage*, turning the gold bar between successive strokes, a smooth surface, circular in shape, was obtained. The two cups were formed on anvils of special shape. A socket was provided in the apex of the cup, into which the edges of the bow were fitted, and secured by *sweating* or surface-melting. The rims of the cups were not secured by this process,

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[1] *On Five Gold Fibulæ lately discovered in the South of Ireland, and on the Art Processes used in their Manufacture.* PRIA, xix, 776.

[2] A specimen of an unfinished cupped ring, which has not been bent, actually exists : it was found at Inis Geimhleach, Co. Cork, and has passed into the possession of the Royal Irish Academy from the Day Collection.

as these thin parts of metal would have been completely fused if the artist had endeavoured to apply it. They were simply hammered round the thickened rim of the cup. The ornamentation was produced, not by engraving, but by means of a hammer and chisel,. as microscopic examination of the surface has shown. Mr. Johnson concludes his study with the following list of the tools necessary for the production of such an object as this : furnace, charcoal, crucible, mould for ingot, flux, bellows, several hammers, anvils, swage anvil, swages, chisel for ornament, sectional tool for producing concentric rings.

VII. In March, 1854, some labourers working on the construction of the railway from Limerick to Ennis, Co. Clare, turned over the stones of a small carn, in the heart of which they found an extraordinary store of objects of this type, associated with other gold ornaments. The spot where the discovery was made was near a great fortified enclosure whose proper name it seems now impossible to recover —it is referred to as " Cahermucna " in eighteenth century documents (which looks like Cathair Muc-shnáimh), and is now called Moghane. It has been reasonably conjectured that the hoard was loot from this fortress, buried by the raiders and never recovered. When the labourers found it there was, of course, a wild scramble for the plunder, and most of the objects found their way to the melting-pot : only a few were saved for the Royal Irish Academy Museum, or for other collections. It was by far the greatest find of associated gold objects found in Western Europe, and the loss to science of the great bulk of the hoard is most deplorable.[2] A selection from the find was

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[1] *Collectanea*, vi, 237.

[2] A full account of everything that can be discovered about the hoard and its contents will be found in Mr. Armstrong's paper, *The Great Clare Find of* 1854, in JRSAI, xlvii, 21. See also T. J. Westropp, *Types of the Ring-forts and similar Structures remaining in Eastern Clare.* PRIA, xxvii, C, p. 217, and especially pp. 218–220.

exhibited by Dr. J. H. Todd to the Royal Irish
Academy in 1854 : this portion weighed in all
over 174 ozs. Records of 150 objects are pre-
served, drawings of which will be found accompanying
Mr. Armstrong's paper referred to in the foot-
note. Of these all but about a half dozen are
perfectly plain cupped rings of comparatively small
size. The uniformity of the objects in this great
hoard is an argument in favour of the " currency "
theory.

FIG. 63—GORGETS

VIII. Next in importance to the cupped rings,
among the gold ornaments to be attributed to this
period, come the gorgets (fig. 63). These resemble
the earlier lunulae, in being crescentric breast orna-
ments ; and corresponding to the smaller discs at the
ends of the horns of the lunulae there are circular
discs secured in the same position in the gorgets.
These discs suggest, if they do not indicate, that the
gorgets are an elaboration of the lunulae. They differ

from the lunula, first, by their superior size ; secondly by their shape, which is curved, whereas the lunula is always flat ; thirdly by the technique of their ornament, which is *repoussé*, not engraved ; fourthly by the distribution of the ornament, which covers the whole surface of the object, instead of being confined to specific parts as in the case of the lunula ; and fifthly by the nature of the ornament, which consists chiefly of raised ridges, rows of dots, and rope-pattern, in lines running parallel with the edges of the object.

FIG. 63A—GORGETS

To this enumeration of differences we may add that in the lunula the flat disc at the ends of the horns is always in one piece with the ornament, whereas the circular discs in which these gorgets terminate—and which are always elaborately ornamented with concentric rings, groups of concentric circles, dots, and the like—are made as separate pieces, and are secured to the gorgets by means of gold wire or in similar ways. In one gorget in the Royal Irish Academy's collection a woollen thread, apparently original, with gold wound around it, secures the discs.

Another form of gorget (fig. 64) resembles in shape and appearance the cupped ring. In this the bow is not a solid bar, but is a disc bent to shape. It terminates in cups of the same kind as those

FIG. 64—" CUPPED RING " GORGET

which characterise the cupped ring, but smaller in proportion.

A number of large spheres of gold (fig. 65), each consisting of two hollow hemispheres fitting into one
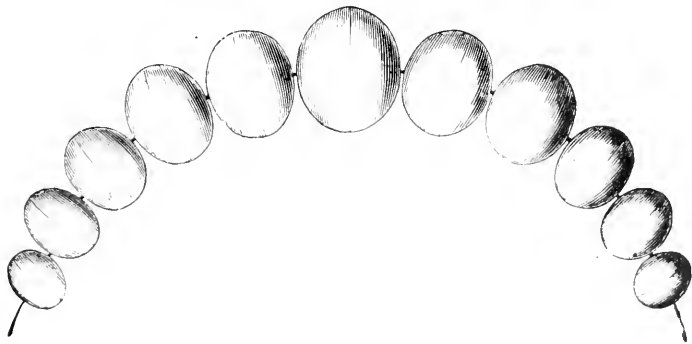
FIG. 65—GOLD SPHERES

another and welded together, was found at Carraig on the Sinann, Co. Leitrim, in the year 1834.   A hole is cut through the middle of each hemisphere for threading.   There were originally eleven[1] in the series, ranging in diameter from $3\frac{7}{8}$ to $2\frac{3}{4}$ inches.   Most probably they were a neck ornament for a horse, as they are too large and clumsy to be worn by a man.

To this period also are to be assigned circular discs of gold, bearing concentric or cruciform ornaments engraved or *repoussé*, upon them.   These as a rule measure about 3 inches in diameter and are made of this gold leaf.   There are usually perforations, by
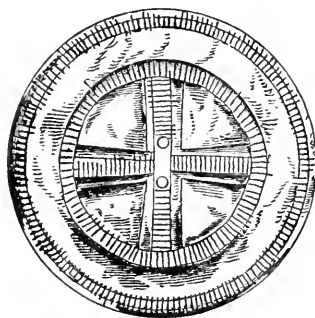
FIG. 66—GOLD DISCS

means of which they could be secured to a textile fabric ;   and it is possible that some of these were used for the enrichment of garments, a stiff embroidered ring surrounding and protecting the edge.

Another suggestion has been made that they are to be considered as sun-discs, being the gilded ornament of an object like the famous sun-chariot found in Trundholm Moss, Denmark.[2]   One disc of bronze, in the British Museum, with a marginal ring, such as is seen on the Trundholm disc, may well be analogous :

[1] Another account says thirteen,   One is in the British Museum, one in private possession, and seven in the Royal Irish Academy Museum :   see PRIA, xxx, C, p. 450.

[2] R. A. Smith, *On Gold Discs of the Bronze Age in the British Museum*.   Proceedings Soc. Antiq. Lond., Ser. ii, vol. xx, p. 6.
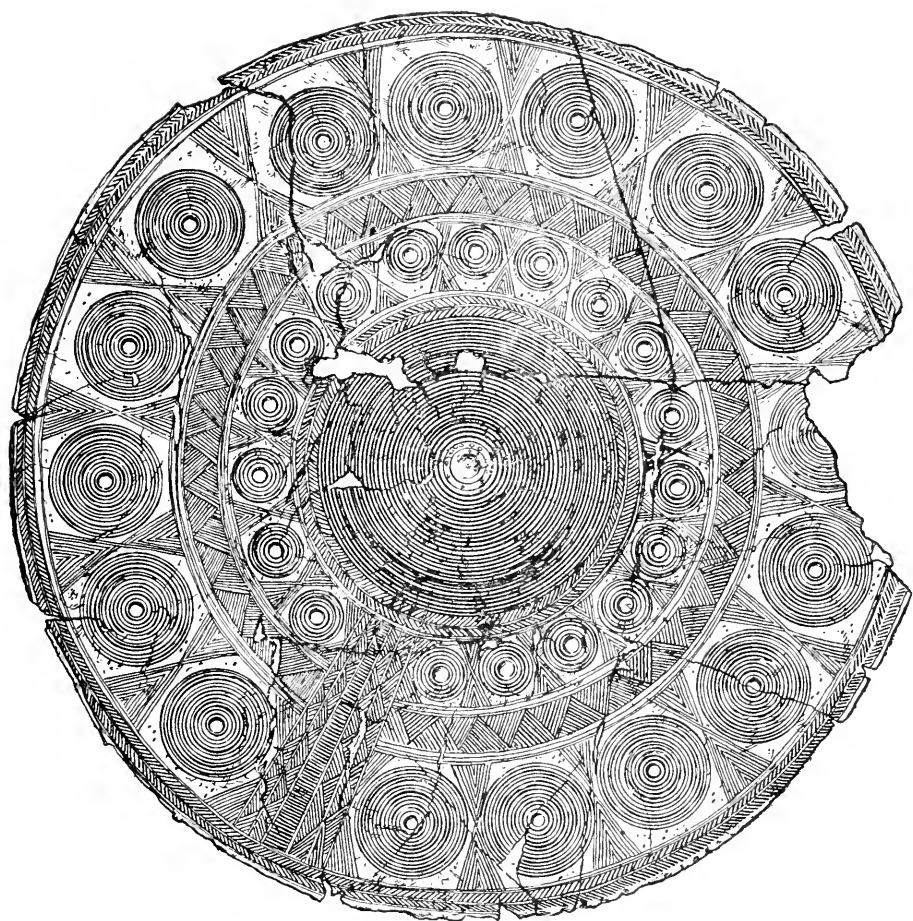
FIG. 67—GOLD DISC FROM LEATH-TÓN
(By permission of the Royal Anthropological Institute)

and the splendid disc found at Leath-tón, Co. Cavan, recently acquired by the Royal Irish Academy, most probably is the decoration of a similar object[1] (fig. 66).

Irish archaeologists have to regret that, owing to the fewness of ancient burials that have been excavated under proper scientific auspices, very little is known as to the disposition of gold ornaments upon the body. Most of the gold ornaments known have been discovered by labourers, digging in the fields or in the turbaries, and have been snatched as by a miracle from the jaws of the local jeweller's crucible.   Hence very little indeed is known as to the exact use of the gold ornaments which have been found associated with interments.   We do not know if they were worn by men, or by women, or by both sexes indifferently. The discovery of a few skeletons wearing " cupped rings " would help to solve the problem presented by these objects more satisfactorily than unlimited theorising.

There is, however, one burial recorded which is of importance in this connexion.   It was a discovery made in 1805 at Baile na Martra in Co. Cork ; it is thus recorded[2] :   " Throughout the whole of this district the limestone rock abounds with natural caves, and, in 1805, a curious discovery was made not far from Castle Martyr by a quarryman, in consequence of his crow-bar having accidentally fallen through a fissure of the rock.   He widened the aperture and descended in search of the instrument into a cavern, where he was not a little surprised to behold a human skeleton, partly covered with exceedingly thin plates of stamped or embossed gold, connected by bits of wire :   he also found several amber beads.   The annexed sketch of one of these gold plates is the same size of the original, which is in the possession of Mr. Lecky of Cork, with the fragments of a head.   The

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[1] E. C. R. Armstrong, *A find of Gold Objects from Lattoon, Bally-jamesduff, Co. Cavan.*   Man, vol. xx (1920), no. 45.

[2] Crofton Croker, *Researches in the South of Ireland*, p. 253.

remainder of the gold was sold and melted in Cork and Youghal; and a jeweller who purchased the greater part told me the quantity he had melted—to use his own words—was rather more than the contents of half a coal-box." The object is now in the collection of the Royal Irish Academy: see Armstrong's *Catalogue*, p. 92, No. 398.

R. R. Brash, who cites the above passage,[1] compares with it a burial found at Achadh Bológ in Co. Cork. Here a large sheet of gold covered the entire breast and upper part of a skeleton buried in a grave. Some fragments of thin elastic gold plate and a piece of " ring-money " remained when Mr. J. Windele heard of the find: the rest was melted down.
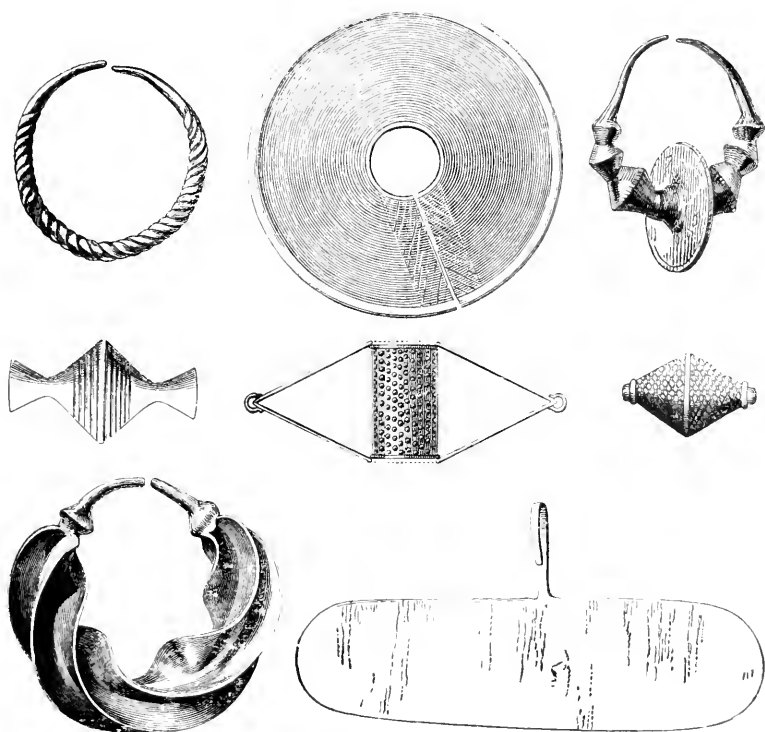
FIG. 68—GOLD BEADS, EARRING, RINGS, ETC.
(The middle figure in the second row is a section through the circular object above it).

[1] JRSAI, xi, p. 514.

The ornamentation of the Baile na Martra inter-
ment seems to have consisted of gold discs such as
those described and figured above ; though the sur-
viving one is a trapesial, not circular, in shape. That
of the Achadh Bológ grave was most probably a large
gorget of the kind described on a previous page.

Beads (fig. 68) of gold, consisting each of two cones
joined together at their bases—after the manner of
the double hemispheres in the horse-beads described
above—are not infrequent. They are of varying
sizes. Some of the larger objects of this kind have a
slot cut in the side communicating with the central
perforation. Small rings—ear-rings, finger-rings, or
bracelets—of gold, of torque pattern, also call for
notice here. These are usually open, the ends of
the ring being plain and pointed, and the body
twisted in torque fashion. Some of these small
objects seem further to illustrate the superstition
against closed rings : compare also the ornament on
the sun-disc, fig. 67.

Vessels of gold were probably in use, but recorded
specimens are very rare. There is the bottom of one
in the Royal Irish Academy's collection : but the best-
known example is that discovered in a bog at the
Devil's Bit mountain, Co. Tipperary, in the year 1692,
called from the name of the family in whose pos-
session it remained, the Comerford Bowl. It is

FIG. 69—THE COMERFORD BOWL (SO-CALLED " CROWN ")

now lost. It was for long absurdly called an " Old
Irish Crown " (fig. 69). Its ornamentation is *repoussé*,
resembling that of the gorgets.

Both torques and cupped rings, like lunulae, seem to have been kept, when not in use, in wooden boxes ; these were made out of blocks of timber with hollows of appropriate size and shape scooped out of

FIG. 70—THE LOCH GAIR SPEAR-HEAD

them, and with a stopper-like lid fitting into the hollow.

There are not many examples extant of the use of gold to enrich other objects. This does not mean that it was not frequently used for such a purpose : but as the decorated objects would most likely be made of wood or textiles, this perishable material would have decayed, leaving the gold as a meaningless lamina. Where it was applied to objects of a baser metal, such as bronze sword-hilts or the like, we might hope for its survival. Such an object is the fine bronze spear-head found at Loch Gair in Co. Limerick, and now in the British Museum (fig. 70). This is a Fifth-period specimen. The outer surface of the socket is encircled with two bands of gold, bearing linear ornaments : between the bands the surface of the bronze is channelled with grooves, in the direction of the axis of the socket, which are filled with inlays of gold, kept in position by the gold bands.

IX. Besides gold, amber and jet were in use in the latter part of the Bronze Age as materials for ornaments. As these materials do not occur in Ireland, at any rate in more than insignificant quantity, in unworked form, objects fashioned from them are valuable proofs of
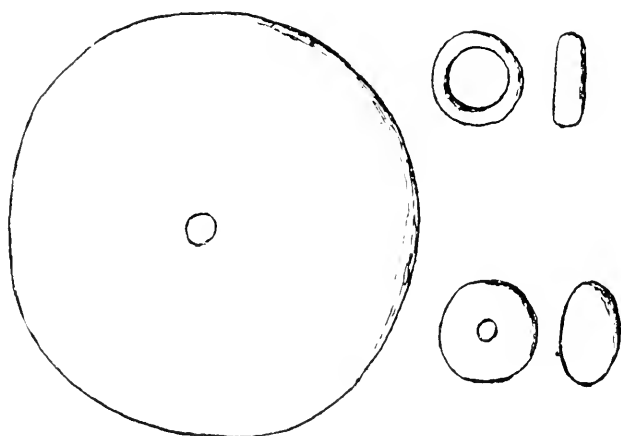
FIG. 71—AMBER BEADS

the prosecution of trade—amber with the Baltic, and jet, probably, with that part of South Britain now called Yorkshire.

Bronze-age amber ornaments, in Ireland, appear to take exclusively the form of flattened oval beads, perforated along their shorter axis. These objects have been found in considerable numbers, both singly and in groups : the latter being evidently the remains of necklaces which have lost their connecting strings. The use of amber for the enrichment of other objects (such as sword-hilts or gold ornaments) does not seem to have been introduced into Ireland in the Bronze Age. The largest amber bead of Irish provenance is $2\frac{3}{4}$ inches in diameter : it comes from Caiseal, near Ard Macha, and is in the R.I.A. collection.

That certain of the amber beads found in Ireland are to be ascribed to the Bronze Age was first proved by a find of associated objects found at Mount Rivers, near Coachford, Co. Cork.[1] This hoard contained a few amber beads, of the type above described, and also two cupped bracelets in gold and one in bronze—a very rare material for this type of object—as well as two bronze socketed celts. The gold cupped rings and the socketed celts date the find to the fifth period of the Bronze Age. With this accords a more recent " find," made near Biorra in King's County, which has also being acquired by the Academy. This consisted of the beads of a very fine amber necklace, associated with a gold cupped ring.

The objects in jet or lignite found in Ireland are more · varied in shape than those of amber. They include buttons, of a conical form, with V-shaped holes for threading, opening through the base of the cone— a type ascribed by Montelius to the first and second periods of the Bronze Age in England : armlets, which are simply plain circular rings : and beads of various

[1] See G. Coffey, *Recent Pre-historic Finds acquired by the* [*Royal Irish*] *Academy.* PRIA, xxx, C, p. 85 ff.

shapes—discoidal, cylindrical, and ellipsoidal, the latter sometimes with a rim or thickening surrounding each end of the perforation. These jet beads are sometimes of great, even inconvenient, size : like the gold balls described above, some of these may have
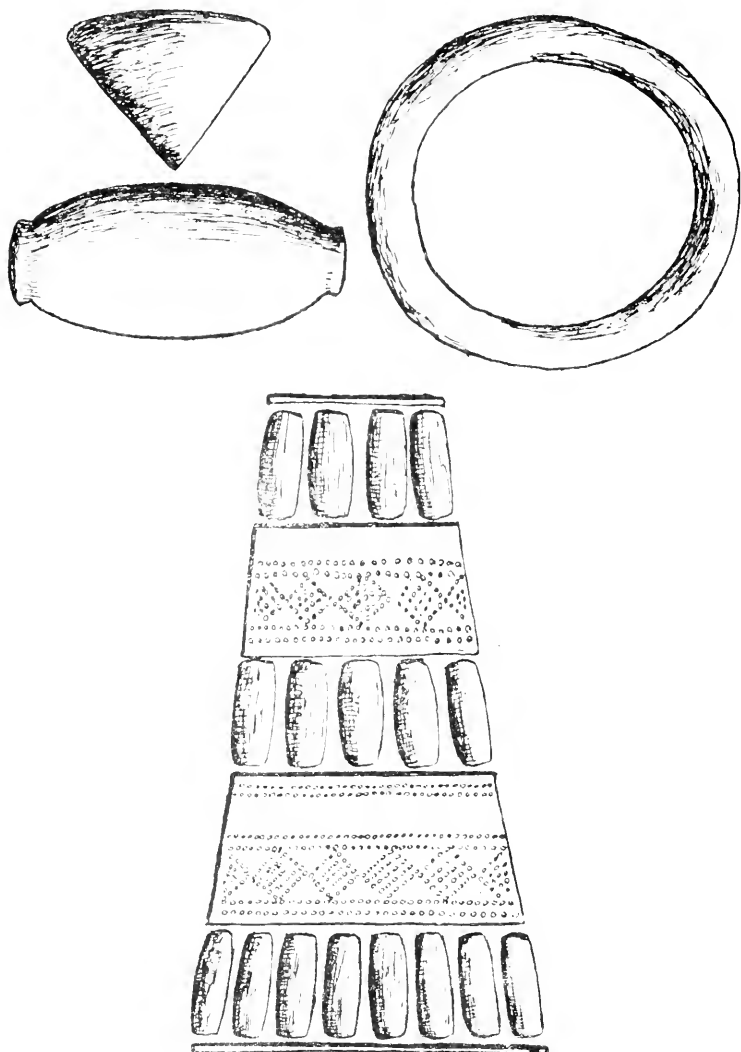
FIG. 72—JET ORNAMENTS

been used for the decoration of horses. End and cross-pieces sometimes appear, to indicate that several chains of beads were combined in the one necklace. Discs of jet, perforated for suspension and ornamented with engraved points, are sometimes found.

A jet necklace found in a bronze-age burial cist at Oldbridge, Co. Meath, consisted of alternate cylindrical and discoidal beads : with the beads was one pendant, triangular in shape, pierced with a hole running from one broad face to the other, so near the base of the triangle that the pendant would hang apex downward. There can be no doubt that this object was suspended from the necklace[1] and that it was an amulet.

X. We must now consider for a moment the important question of chronology. It is impossible to attach exact dates to pre-historic remains : this impossibility is, indeed, of the essence of the distinction between the pre-historic and the historic. But we may indicate approximately, on the basis of arguments founded on various observations, some suggestion of a date that may be correct within a couple of centuries. In the absence of written documents we can hardly hope to go further.

The Fifth Period of the Bronze Age in Ireland ends with the introduction of the Iron culture. This culture, as we have already seen, there is every reason to believe was brought in by a race of invaders. So far as we can at present say, these invaders were in the culture of Middle La Tène,[2] the date of which is approximately fixed at 300–100 B.C. It is possible that they may have come earlier, but not much earlier. The farthest limit of date that we can fix for this event is 400 B.C. This then may be taken as the date of the end of the Fifth Period.

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[1] The restoration, figured PRIA, xix, 751, is not accurate in this respect. Compare the jet necklace figured in Anderson's *Scotland in Pagan Times*, second series, fig. 55. Ornaments of similar form are sometimes found in steatite.

[2] For an explanation of this term see the companion volume on *Ireland in Celtic Times*.

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The First Period is to some extent dated by its partaking in the universal copper-age culture of Europe. The flat axe-head and the triangular dagger are found alike in Ireland and in early Minoan sites in the Aegean. The time of the early Minoan period is fixed approximately to 3000–4000 B.C. ; this is the evidence of associated objects of Egyptian provenance, to which the decipherable Egyptian records permit us to assign a date : but it must be remembered that owing to a variety of causes the chronology of the early Egyptian dynasties is still very uncertain, and there are profound differences between the views of different authorities. But we can hardly be very far wrong if we accept a date not much later for the beginning of the Copper Age in Ireland. If we fixed it at about 2500 B.C., as a moderate estimate, time would be allowed for the copper culture to make its way across the continent to this remote island in the west.

Thus we have 2100 years to distribute between the five periods, or an average of 420 years apiece. In apportioning these we have to remember that the earliest steps of civilisation are the slowest, and therefore the first two periods were probably longer than the others : also that the fourth period, which has left comparatively few distinctive remains, was probably the shortest. The following sub-division is, admittedly, arbitrary, but it is in accordance with these considerations, and may be taken as a working hypothesis till further discoveries shall supersede it :—

		B.C.
First period	600 years	2500—1900
Second period	500 years	1900—1400
Third period	400 years	1400—1000
Fourth period	200 years	1400— 800
Fifth period	400 years	800— 400

Behind the Bronze Age stretches the Stone Age, into an unknown antiquity. The Neolithic period

proper begins in Central Europe with the end of the
Daun, the last of the three minor returns of glacial
conditions which closed the Ice Age. On the basis
of geological arguments this is fixed by Penck and
Brückner, in their study *Die Alpen im Eiszeitalter*, to
about 7000 B.C. Somewhat older than this is the
Campignian culture, to which the Latharna gravels
belong : we may perhaps assign to them a date of
about 10000 B.C. But in discussing chronological
problems, the larger the figures with which we deal
the greater must be the margin of error which we
must allow.

CHAPTER V

POTTERY

I. Pottery which can with assurance be attributed to the Stone Age is in Ireland very rare ; in fact, only a few such sherds are recorded. These represent globular bowls with round bases, ornamented with a *semée* of punctured dots. The illustration (fig. 73)
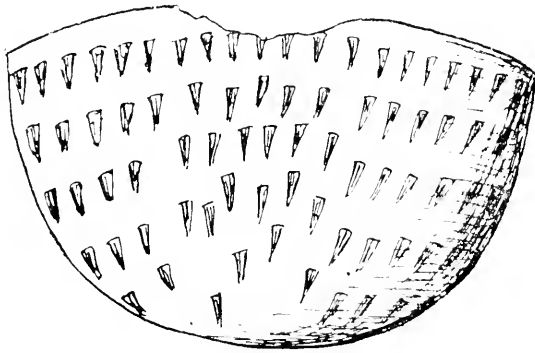
FIG. 73—STONE AGE POTTERY

represents the largest sherd of this type known ; it comes from Dún an Ghabhair, Co. Antrim, and is now in the Royal Irish Academy's collection.

II. Of the bronze-age pottery of Ireland, as of that of Britain, and indeed of all northern Europe, the following are the general characteristics :—

(*a*). The clay is very coarse, and often extremely gritty.

(*b*). The potter's wheel was never used ; the vessels were modelled with the hand, and are in consequence seldom more than approximately symmetrical.

(*c*). The ornament is traced freehand, and is there-fore often very irregular and crooked.

(*d*). The vessels were baked in an open fire, not in a kiln made specially for the purpose ; in consequence of this, the colour, which in general is of a buff shade tending to reddish, sometimes varies considerably in tone over the surface of a single vessel.

(*e*). With the exception presently to be noticed, there is no trace of slip, glaze, burnishing, colour, or other applied ornament.   The decoration consists exclusively of patterns engraved, or modelled in relief in the clay.   These, however, are often very rich.

III. The pottery found in the sandhills and other domestic sites is as a rule much broken ; often the sherds are so small that it is scarcely possible to suggest a restoration of the vessel to which they belonged.   The late Rev. G. R. Buick, who possessed a large collection of sherds from Portstewart and from Whitepark Bay, essayed the task, by completing on paper the curvature indicated by the shape of the fragments.   His restorations are shewn in fig. 74. The normal types are represented in the two central figures ; they consist of a rather flat and wide bowl or pan, the upper diameter of which was sometimes as much as 16 inches, and of a taller, more cylindrical vessel, that may be described as a milk-bowl.   Other types, as the lowermost figure in the illustration, are indistinguishable from the pottery more usually associated with tomb-furniture ; indicating that the cinerary urn was such in virtue of its use, not necessar-ily of its form—in other words, that the specific types of funeral pottery were really domestic vessels which happened to be suitable for the special purpose indi-cated. Dr. Buick also notes[1] that certain of the vessels seem to have been " first roughly made, and

[1] JRSAI, xxi, p. 440.

Fig. 74—Sandhill Pottery
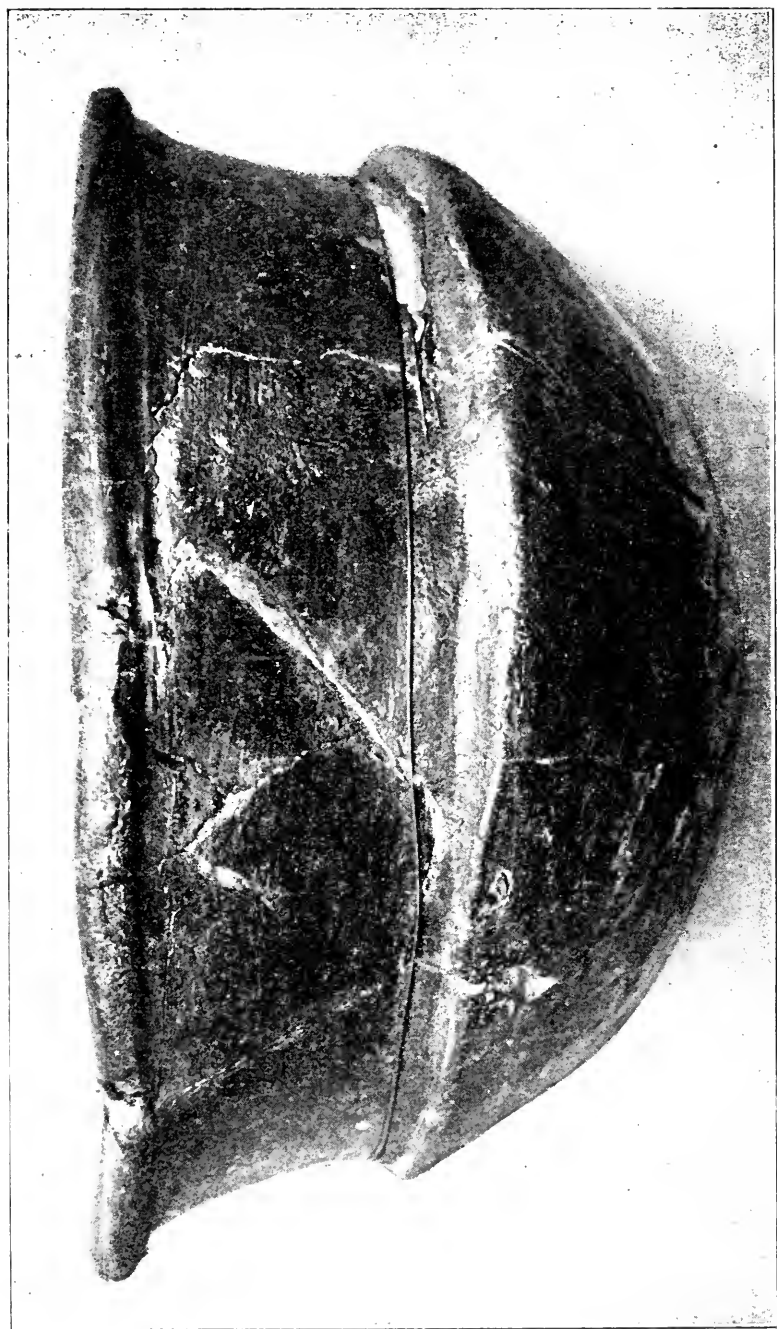
Fig. 75—Cooking Pot from Dun Droma

then when partially dry coated or smeared over with a thin layer of an extremely fine paste, to make them less porous, and give them a finish " : he also suggests that the pieces of haematite found sometimes in shore sites were used for this purpose (and not for personal decoration), and that the grindstones also found in these settlements were used for reducing the paste, thus applied as a slip. The figure at the top of the illustration, from Dún Droma, is remarkable for the two lug handles. Another specimen of domestic bowl, also from Dún Droma, is shewn in fig. 75.[1] It is globular below, breaking its curve by a set-off about half-way up. A similar vessel, which I judge to be about the same size,[2] was found in fragments at Portstewart.
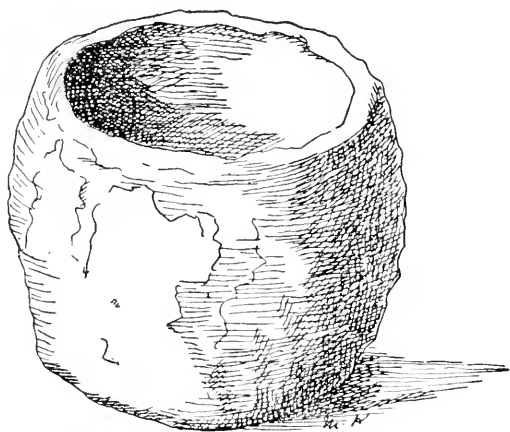
FIG. 76—BOWL, WHITEPARK BAY

A straight-sided bowl, from Whitepark Bay (fig. 76), was found by Mr. Knowles.[3]

[1] Rev. L. Hassé, *Objects from the Sandhills at Dundrum, and their Antiquity.* JRSAI, xxiv, 1.

[2] PRIA, xxv, 197. There is no scale on the illustration, and the appended note that it is " $\frac{1}{4}$ size " is ambiguous—whether linear or areal is not stated. I presume the latter.

[3] PRIA, xxii, p. 386. fig. 6.

Dr. Buick, in the paper already alluded to, remarks that the sherds from Whitepark Bay shew marks of burning, but, contrary to what we might have expected, these marks are on the inner surface, not the outer surface, of the pottery. This seems to indicate their use as cooking-vessels, but that the cookery consisted of baking with the help of hot stones rather than boiling over a fire.

In certain of the shore settlements on the coast of Co. Clare lumps of fine clay, such as might have been used in the manufacture of pottery, have been discovered.

IV. Four different forms of vessel appear in the bronze-age tomb pottery of Great Britain : beakers, food-vessels, cinerary urns, and the so-called " incense-cups."   In the skilful hands of the Hon. John (now Lord) Abercromby,[1] the types and ornamentation of these different vessels have been made to yield much information as to the distribution of peoples in the Bronze Age.

V. We cannot here enter fully into the subject as treated at large in the work referred to ; we must confine ourselves to the subject of pottery as found in Ireland.   The first important fact for us to notice is the almost total absence of the beaker.   The beaker is a vessel which may be said in general to have an outline shaped like a rather long capital S [2]—a jug, in British pottery usually without a handle, having a globular body, the sides of which curve upward into a hollow neck.   This type of vessel is fairly common in England and in the south of Scotland ; but from Ireland only two specimens are recorded—one from the great carn of Mount Stewart, more fully described on a later page, and the other, a mere fragment or two, from Co. Sligo.

[1] See his sumptuous work, *A Study of the Bronze-age Pottery of Great Britain and Ireland, and its associated Grave-goods* (Oxford, 1912).

[2] " In general," because there are a number of subordinate types and varieties, for an enumeration and illustrations of which we may refer the reader to Lord Abercromby's work.

The reason for this absence from Ireland of the beaker is interesting. By a comparison of types, and by a consideration of the probable evolution by which they developed, Lord Abercromby has shewn that the beaker was first introduced into England from the Continent, somewhere on the southern shore of the island, and about the beginning of the Bronze Age. It is associated, in interments, with people of the brachycephalic race to which the introduction of the Bronze-age culture into England is due ; and the geographical distribution of the successive evolutionary types of the beaker throughout England gives us a clue to aid us in tracing the progress of the brachycephalic colonists. We have already seen that this people never made their way into Ireland ; hence their specific form of pottery was never introduced into that country. The two specimens that have come to light may, as Lord Abercromby suggests, have been the work of captive women, taken in some raid of the people of Ireland on a shore-dwelling community of Britain. We say captive *women*, because the comparatively small size of the hands, as indicated by groups of finger-prints sometimes preserved upon the sides of the vessels, shews that the manufacture of utensils of pottery was one of the numerous duties of the women of the household.

VI. On the other hand, food-vessels are very common, and there are several different types in use in Ireland. These types differ from one another in the treatment of the sides of the vessel ; the base is always flat, and the diameter may be as much as, or a little more than, double the diameter of the base : though sometimes the top and bottom of the vessel are much more nearly equal in size. The outlines of the different types is shewn in fig. 77 : they are four in number.

1. *Cylindrical vessels.*—This form is nowhere very common, and in Ireland is very rare. Abercromby figures but one example, of unknown provenance ; and this is rather barrel-shaped than cylindrical, as it

has a distinct entasis.   This vessel is elaborately
ornamented.

2. *Oval vessels.*—This form, on the other hand, is
a characteristically Irish type, having no counterpart
in Great Britain.   The base is more rounded than in
the other types (though it is sometimes flattened) ;
the sides curve regularly, like a pair of parentheses,
and thus, although there is no definite shoulder, such
as we see in the fourth type, the diameter of the mouth
is less than the maximum diameter of the body of
the vessel.   So far as the recorded finds go, this form
seems to be confined to the northern half of Ireland ;
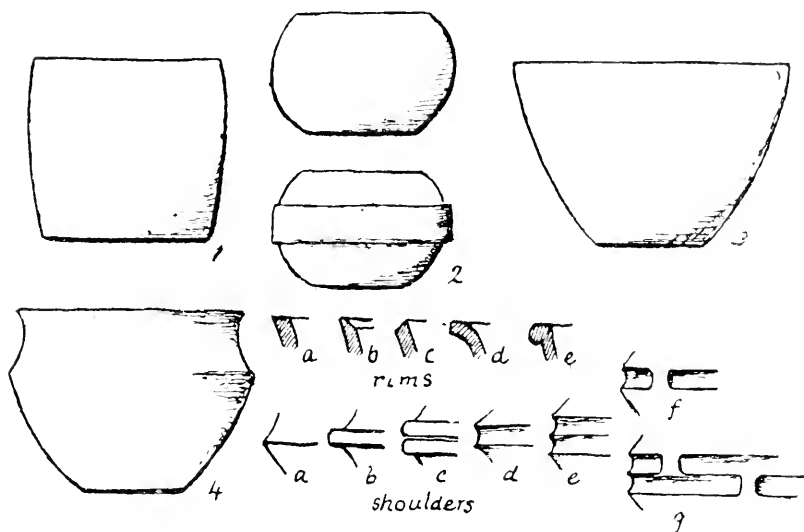
FIG. 77—OUTLINES OF TYPES OF FOOD VESSELS

it penetrates into Scotland, where a few examples
have been found—one more illustration of the indis-
soluble archaeological links between Scotland and
Ireland.

The standard form, with unbroken curve, seems
to be the oldest.   But the form taken by the ornamen-
tation led to the diversifying of the surface of the
vessel with horizontal grooves ;   these developed

further into a raised band emphasising the widest part of the bowl. This band, in its turn, breaks into ridges and grooves, and at last a form is reached difficult to distinguish from the shouldered fourth type.

3. *Bowl-shaped vessels.*—In this form the mouth is the widest part of the vessel. The shape ranges from the curved form of a sugar-bowl to the conical straight-sided form of a flower pot ; but the type is everywhere rare, especially so in Ireland.

4. *Shouldered vessels.*—To this group the great majority of food-vessels belong, both in Ireland and in the neighbouring countries. There are a number of subordinate types, depending on the treatment of the shoulder and of the mouth. The mouth may be (*a*) plain, (*b*) bevelled internally, (*c*) bevelled externally, (*d*) everted, or (*e*) moulded. The shoulder may be marked by (*a*) a simple angle, (*b*) one raised ridge, (*c*) more than one raised ridge, (*d*) one groove, (*e*) more than one groove, (*f*) a groove interrupted at intervals by stops, which may be (i) perforated from side to side, or (ii) not so perforated, and (*g*) more than one groove interrupted by stops. These different forms are shewn in the diagram, fig. 77.

But the elaborate ornamentation of food-vessels is their most striking feature. In this respect the pottery of Scotland and of Ireland far surpasses that of South Britain. It is not improbable that for this difference also the brachycephalic invaders of South Britain are responsible ; that although they actually introduced the Bronze culture, they were a drag on the wheels of its artistic development.

The ornamentation of bronze-age pottery in these islands never takes the form of the representation of natural objects. This is a very noteworthy fact ; for the combination of dots and strokes which, for a child, represents the human face, might seem a more interesting and an easier subject than the combinations of geometrical abstractions which are actually used for decorative purposes by the potters. It is highly probable that this absence of naturalistic forms is due to a religious prohibition or tabu, in some degree

analogous to that prevalent among modern Muslims. To represent a figure, human or animal, might involve the invocation of a supernatural being in a similar form ; and his immediate presence might be very inconvenient to the maker or the owner of the vessel bearing this ill-omened decoration. But it must not be overlooked that we cannot assert with assurance that the decoration of the pottery which seems to us merely " abstract," was necessarily without a concrete meaning to the potters themselves. They may have attached to the motives which they combined into their patterns meanings, symbolical or magical, which we can no longer hope to recover.

The vessel having been formed, and while its clay was still soft, was ornamented by means of one or other of the following instruments : the finger-tip or finger-nail ; a point (probably of wood), sharp or blunt ; a slip of wood with a notched edge, curved or straight ; a cord of twisted strands ; a rod with a fine cord wrapped round it ; a cord looped into a chain ; or a flat slip of bone with a triangular tip. The ornament of food-vessels usually covers the whole surface—unlike the beakers, in which it is frequently interrupted. It may be essentially vertical or horizontal in direction, though the latter is the commoner : or there may be a combination of vertical and horizontal patterns in one vessel. The decoration may be simple or compound, continuous or metopic. Metopic patterns are an Irish speciality. The name is adapted from that of the *metopes* which break up the frieze of a Doric temple, and implies an alteration of ornament in one horizontal zone. Thus, suppose a zone to be ornamented with a series of zig-zags, which might be unbroken, as in (*a*), or grouped as in (*b*) ; such an

a   b   c
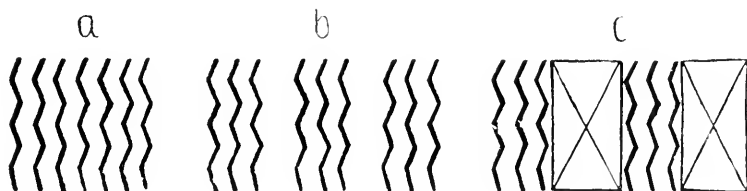
ornament would be called continuous.   But if another pattern alternated with the group of zigzags, as in (c), the ornament would be metopic.   Among metopic forms one of the most characteristic of Irish patterns is the sunk square, breaking a zone into equal spaces. The surface of the square is treated with dot and line ornament, and the spaces between the squares decorated in a different way.

The motives of which the simple ornament of food-vessels is made up are as follows (fig. 78) :—

Dots, impressed with a point, scattered irregularly over an area of the surface of the vessel, or else grouped so as to form a regular figure.

Lines, which may be made by means of any of the instruments enumerated above, and which may therefore be continuous scratches or rows of discontinuous indentations, according to the method adopted. These lines may be horizontal, surrounding the whole vessel, or vertical, or oblique, forming groups covering a zone of the vessel.

Zigzags and *herring-bones*, running vertically or horizontally, formed of combinations of oblique lines.

Lozenges and *saltires*.

Basket-work, formed by filling the triangles of a zigzag with short parallel strokes, thus

This pattern always runs horizontally.

Curvilinear patterns are rare, but sometimes rows of ovals are found.

Compound ornament consists of a combination of the simple motives enumerated above.   These are frequent in Irish work, where they are sometimes of great elaboration. An effective form of ornamentation, often found, consists of broad zigzags or saltires left plain, against a background elaborately decorated with combinations of lines : or the reverse,

the ornamental surface shaded, against a plain background ; or, a third form, treating the ornamental surfaces and the backgrounds with different forms of shading.

The bone slip with triangular tip is often used in forming compound patterns. By pressing the tip into the clay with point alternately upward and downward, a zigzag or a series of saltires will be thrown into apparent relief, according as the points are or are not opposed to one another. The spaces between the saltires thus produced can be treated in some other way : thus there is an example[1] in which they bear small circles, each shaded with two horizontal strokes.

The above analysis is necessarily imperfect. A book the size of this volume could easily be filled with illustrations of Irish bronze-age pottery, and with a discussion of the different forms of ornament with
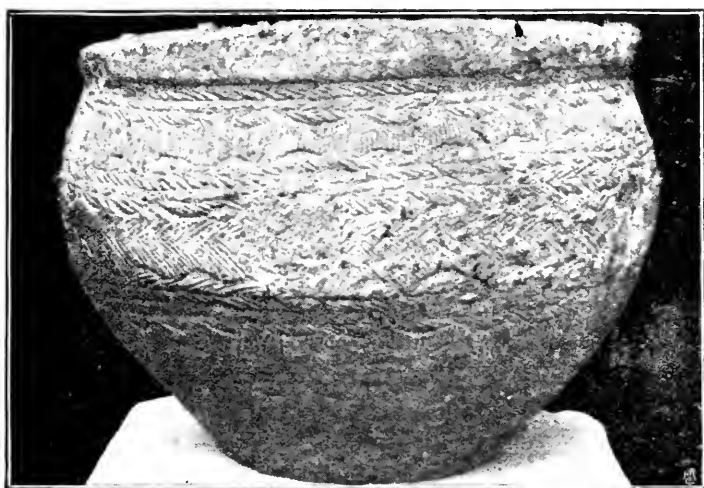
FIG. 78—FOOD VESSELS SHEWING VARIOUS KINDS OF ORNAMENT

which it is decorated : indeed every chapter of the present work could be expanded into a monograph of several hundred pages. We must be content here with indicating general principles.

[1] Figured in Abercromby, op. cit., vol. i, plate xlix. fig. 325.

The purpose of the food-vessel was what its name implies—a receptacle for food. When it was deposited in a tomb it was intended for food provision for the deceased, to supply his spirit with sustenance in
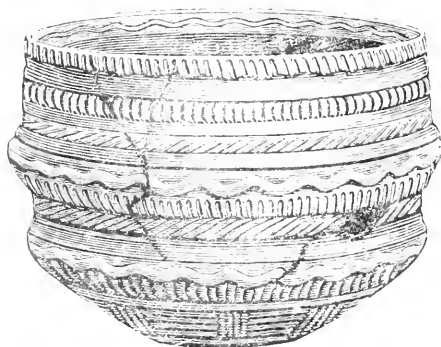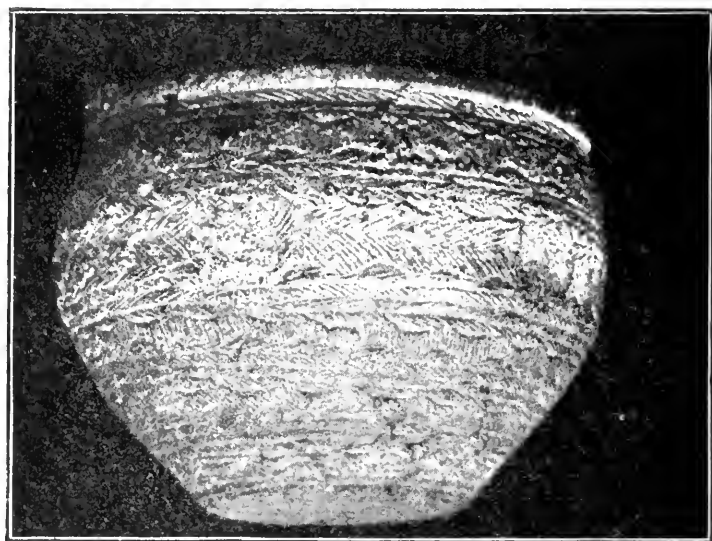
FIG. 78A—FOOD VESSELS

the other world. But in Ireland the food-vessel is often used as a cinerary urn, and contains the ashes of the dead.

VII. Although cinerary urns are best known as receptacles for the burnt remains of human bodies, the discovery of fragments of similar vessels among
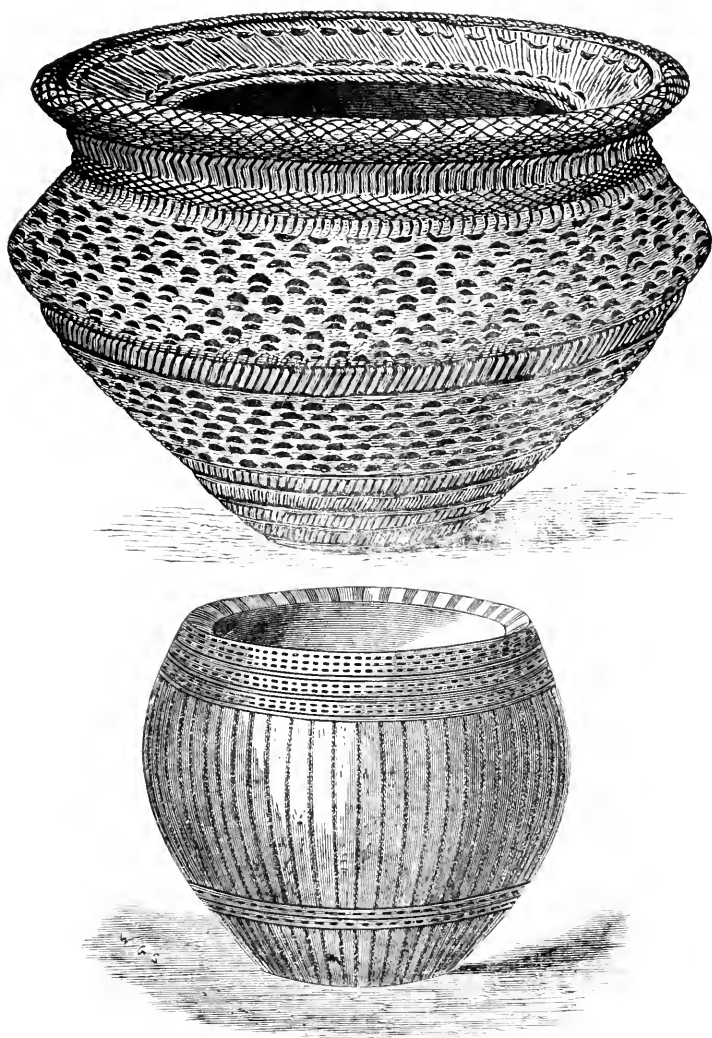
FIG. 78B—FOOD VESSELS

the domestic deposits of Whitepark Bay shews that they were not invented or made for this specific purpose, but were simply domestic utensils found

O

appropriate for such use by reason of their size. It is the size which distinguishes cinerary urns from food-vessels, for in shape vessels of the two classes often

FIG. 78c.—FOOD VESSELS

resemble one another. While food-vessels roughly average about 8 or 9 inches in height, cinerary urns range, as a rule, between an inch or two under, and

a few inches over, a foot in height.   A magnificent example, from Gleann Bhile, near Iubhar Cinn Tragha, Co. Down, now in Belfast Museum, is 2ft. 1in. high.

There is not such a great variety in shape among cinerary urns as there is among food-vessels.   They may be classed as (*a*) cylindrical or barrel-shaped, (*b*) shouldered, like large shouldered food-vessels, or (*c*) double-conical, in which there is a flat base, sides expanding upwards (either V-wise, or with curved sides like a sugar-bowl) to about two-thirds of the height ;   there is then a sudden projection all round, above which the sides contract to a mouth approximately of the same width as the base (fig. 79).
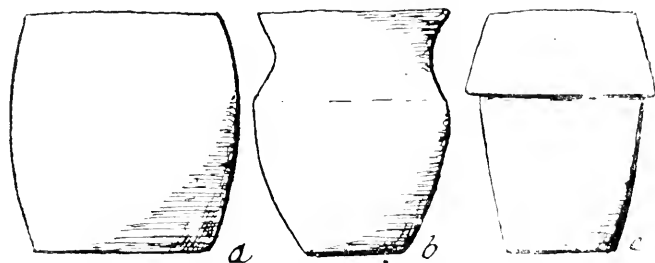
FIG. 79—OUTLINES OF TYPES OF CINERARY URNS

The ornamentation of cinerary urns is, as a rule, confined to the upper portion of the vessel (fig. 80).   It is much less interesting and elaborate, even in Ireland, than that of food-vessels ;   and, from a technical point of view, the construction of the cinerary urns is also inferior.   In dealing with the large masses of clay with which the urns are made, the potter did not, as she did with the food-vessels, model the whole vessel at once ;   she made a number of flat cakes of the clay, irregularly round in shape, and somewhat larger than the area of the palms of her hands ;   she then fitted these together, thus building up the sides of the urn. Although she took pains to smooth over the lines of junction of the separate pieces of clay, these are
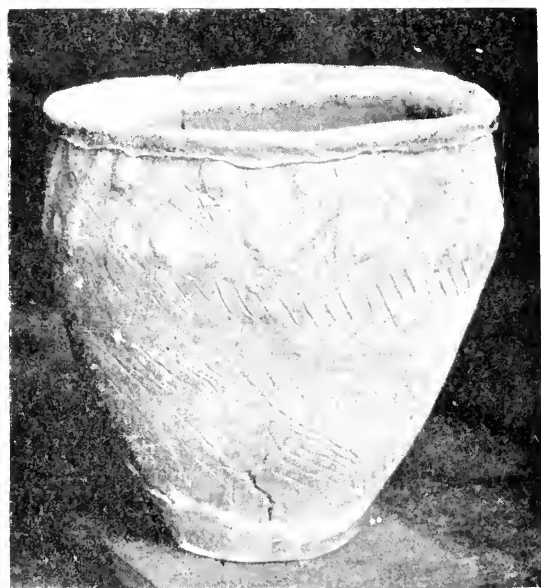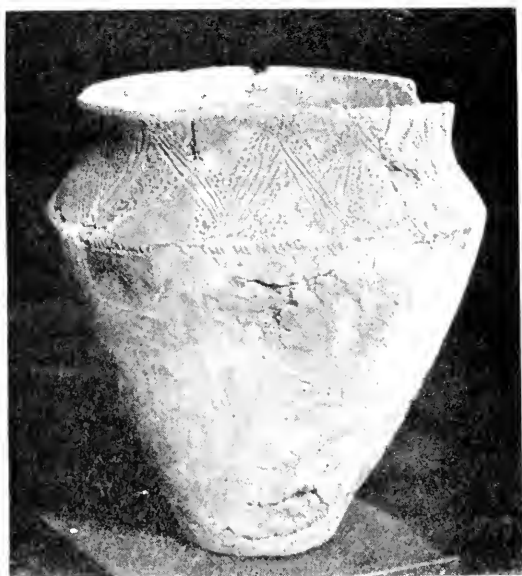
FIG. 80—CINERARY URNS SHEWING VARIETY OF ORNAMENT
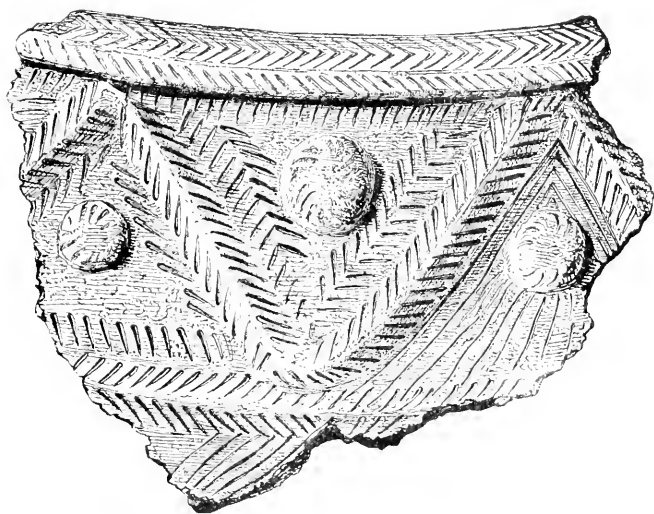
FIG. 80A—CINERARY URNS

generally traceable in the finished urn.   Rope-patterns,
modelled separately, and then attached to the surface,
forming decoration in relief, are not uncommon on
cinerary urns (as in the fragment in fig. 80A), though
seldom if ever found in food-vessels.   A sherd from
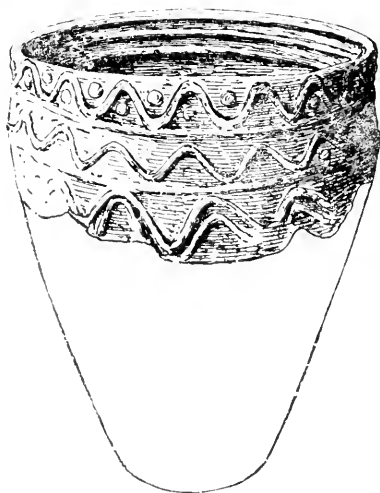
FIG. 80B—CINERARY URNS

near Magh Cromdha, Co. Cork, published by Sir
Bertram Windle,[1] has a raised pattern upon it resem-
bling a sprig of a plant more than anything else.   This
is quite unique in Irish pottery (fig. 81).

VIII. The last of the four classes of tomb-pottery,
the so-called " incense-cup," is very difficult to
explain.   There is nothing to say in favour of the
name, except that it is established, and it is well not
to disturb existing nomenclature, even for the better,
unless some advantage is gained which will notably
counterbalance the inevitable confusion.   We may
keep the term " incense-cup," if we agree that it is
merely an algebraical symbol for an unknown quantity.
Lord Abercromby calls them "pygmy cups," probably
on the analogy of the pygmy flints of the Tardenoisian

[1] JRSAI, xlii, 169, ff.

culture. Perhaps a better name than either would be
" ritual cups," for they seem to have had some use
in the burial rites : but as we know nothing as to the
procedure of a bronze-age funeral, we can only con-
jecture the nature of this use. There is a large variety
of form in this class ; all, however, agree in being
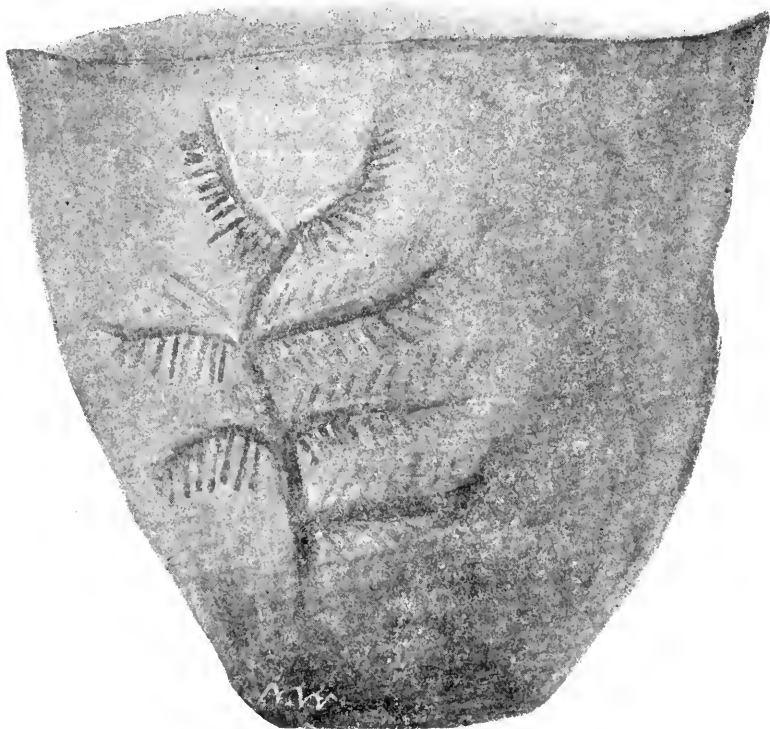
FIG. 81 - SHERD FROM MAGH CROMDHA

smaller than any specimen of the other classes of
pottery. Some are like small food-vessels ; others
resemble modern porridge bowls on a minute scale ;
others again, are perforated all round as though they
had been intended for carrying a spark of fire. A
not impossible purpose, indeed, might have been to
serve as receptacles for a spark by which fire could be

carried, it may be from some sacred perpetual flame, to ignite the funeral pyre.   These cups are often found in tombs in association with the ashes of the
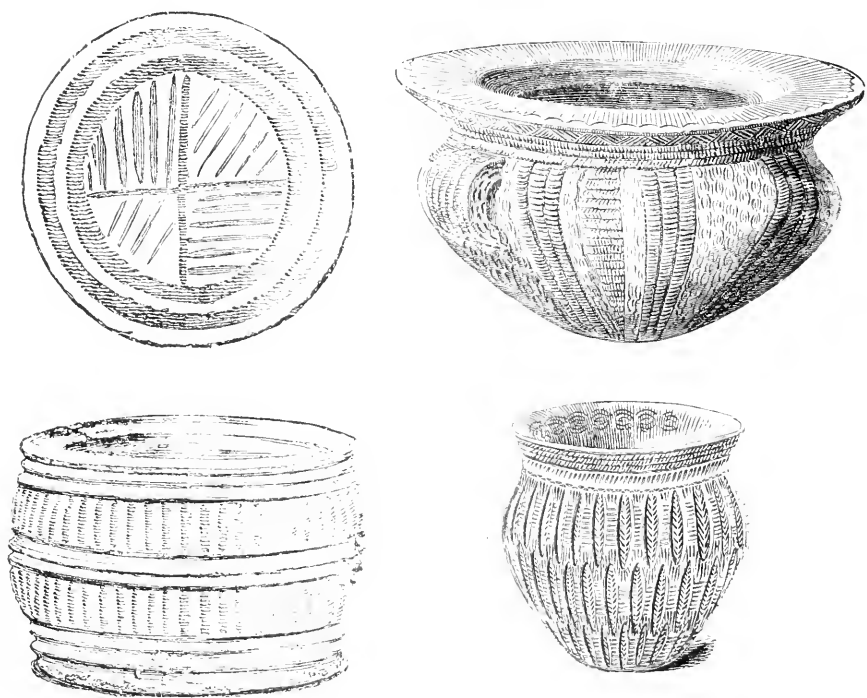
FIG. 82—INCENSE-CUPS

dead, being frequently deposited inside the urn, upon the ashes.   In one case incense cups were found, actually containing ashes[1]; but they are usually empty.

[1] JRSAI, xix, 19.

CHAPTER VI

I. Twice in the preceding pages we have touched on the subject of the present chapter—in speaking of gold ornaments, and in describing the decoration of bronze-age pottery. In both classes of object there is material for studying the principles of bronze-age ornament. We have seen that this consists of combinations of geometrical motives only, and that naturalistic forms are rather conspicuously avoided, probably because of some religious or superstitious prohibition. The artists who had attained to so high a degree of technical skill as the goldsmiths' work testifies, might have been expected to derive inspiration from the human and animal life around them ; and their avoidance of so doing seems to indicate that they had been restrained by some such external force.

II. This chapter is headed " Ornament and Symbolism." These two subjects must be considered together. They overlap to such a degree that the line of demarcation between them is very difficult to draw, if, indeed, it be not quite impossible to do so. We have already observed that the apparently abstract patterns upon the pottery need not necessarily have been abstractions to their designers. It is a commonplace among the observers of nature-folk that patterns

and designs which, for Europeans, have no concrete meaning, are for the natives full of significance ; they can interpret them as a Chinese scholar can decipher the crabbed characters which to the eyes of ignorance look like mere random labyrinths of strokes and curves.   While it would be absurd to read symbolism into every scratch on the surface of a pot, we must always be prepared for the possibility that marks which to us seem merely decorative were at one time capable of a more recondite explanation.   The key to this explanation is however lost—all but certainly, for ever : and we are therefore obliged to draw a rather arbitrary line between devices which we may reasonably consider as symbolic and those which may be treated as pure ornament.   In cases of doubt it is better to avoid any theory of symbolism.

III. That ornament was applied in the Bronze Age to the decoration of perishable objects, such as textiles or utensils of wood, we cannot doubt.   But we can speak only of such objects as the corrosion of time has allowed to survive.   These are objects in metal (gold and bronze), pottery, and the surfaces of stones and rocks. Of the first two of these—metal and pottery—we have already spoken.   The decoration of metal is always much more carefully and regularly executed than is that of pottery, for the obvious reason that the working of gold and of bronze was in the hands of professional craftsmen, while the pottery was the handiwork of the domestic amateur of each household.   Thus the decoration engraved or stamped upon metal is more instructive in determining the history of decorative patterns than is the ornamentation of pottery, rich and varied though the latter undoubtedly is.   In the early periods of the Bronze Age rectilinear patterns prevail—combinations of parallel straight lines, or else such figures as triangles, lozenges, or squares, used singly or in chequers.   The curvilinear forms, spirals and circles, appear later. Thus, we never find curvilinear patterns decorating lunulae, which are of the Second Period ; but on the

gorgets of the Fifth Period groups of concentric circles are frequent decorations.

It is not, however, necessarily to be inferred that curvilinear forms were unfamiliar to the artists of the earlier periods.   The decoration of the lunulae is engraved ; that of the flat flanged celts is punched with a straight-edged punch.   These technical processes necessarily induce a preference for straight lines, curved lines being, in comparison, difficult to draw by such means.   When the goldsmiths learned to stamp patterns with dies upon their handiwork, curved ornament became more usual.   Chronological inferences based on an *a priori* theory of the evolution of ornaments must be treated with caution.   As we shall presently see, the spiral is an important element in the decorations of bronze-age stone monuments, such as New Grange ; and it has been inferred that the date of that monument must be brought down to a time when, it is assumed, the spiral motive might have reached Ireland from the Aegean basin.   The spiral motive is an all-important element in the decorative art of the ancient bronze-age empire of Crete ; and if we are to regard this art as the parent of central and northern European bronze-age culture, we cannot admit the use of the spiral in any part of Europe at a time before it became prominent in Crete and in the countries directly influenced by Cretan artists.   But, as the present writer has endeavoured to shew elsewhere,[1] it is a fundamental error to consider Crete as the parent of European civilisation.   The relations are rather fraternal, Crete having attained to its superior eminence because it basked in the light of Egyptian culture.   Thus the spiral may appear anywhere in Europe independently of Crete ; we find it, indeed, at Butmir in Bosnia in the Neolithic Age ; and the presence of the spiral among the decorations of New Grange is thus no obstacle to our dating that monument as its architecture would lead us to date it— comparatively early in the Bronze Age.

[1] PRIA, xxxiv, C, p. 383, ff

IV. We may now pass to the ornamentation of surfaces of stone : this subject we have not yet discussed. The stones treated may be rocks, boulders, standing stones, or parts of larger constructions such as dolmens or tumuli.

The carving is always incised on the surface of the stone.   It is (i) engraved, (ii) pocked in line, or (iii) pocked in surface.   That is to say, the pattern may be cut with a chisel, or else it may be *crushed* out with a sharp-pointed hammer-like tool, worked either along the lines of the design, or else over the whole surface surrounded by those lines.   In some cases both forms of technique are found on one and the same stone, apparently representing successive applications of the ornament ;   and it is interesting to notice that the later work sometimes goes out of its way to spare the earlier work, as though the symbols were too sacred to be disturbed.   Professor l'Abbé Breuil, of the Paris *Institut de Paléontologie humaine*, who examined almost all the important specimens of Irish bronze-age art in stone during a visit paid to the country in Easter 1920, determined, by an observation of such superpositions of design, that the engraved linear patterns are the oldest, the pocked linear the later, and the pocked superficial the latest.

There is one solitary example of *coloured* decoration of stone remaining in Ireland, discovered by Professor Breuil during the same tour, in one of the carns of Loch Craoibhe.

The random dispersal of the figures over the surface of the stone, and the fact that the decorations consist of endless repetitions of a limited number of signs, combine to indicate that, in these petroglyphic patterns, we have to deal with a system of symbolism, not of mere decoration.   The bronze-age artists had a well developed feeling for the rhythmical nature of decoration, and for the necessity of some approximation to symmetry.   A single glance at any bronze-age pot, or at a gold ornament with engraved decoration, will be enough to prove this.   The artist worked to

a scheme, and each element of the design is planned as part of a symmetrical and consistent whole. But on the rock surfaces, which are decorated with certain figures, there is no such symmetry. The designs are peppered over the decorated area with no apparent relation to one another. There is no scheme of design, even when the whole stone is covered with sculpture ; so far as we can see, the single elements have to be taken by themselves, without reference to any others. Both rectilinear and curvilinear forms are used in the stone carvings ; but they are treated quite differently from analogous figures in metal and pottery. Even when we have a series of triangles or of lozenges in chequers, or groups of spirals, the effect produced is rather that of a multitude of repetitions of a simple pattern, than of a single composite design. Again, certain figures are frequently found in the stone carvings which are *never* used in metal-work or pottery. Above all, the prohibition of natural (human or animal) forms is not rigidly observed in stone carvings.

V. The principal elements used in the bronze-age stone carvings of Ireland, the " Alphabet of bronze-age Symbolism," as we may venture to term it, are shewn in the accompanying diagram (fig. 83), and may thus be enumerated :—

RECTILINEAR PATTERNS

(1). More or less straight lines ; not very common.

(2). Zigzags, vertical or horizontal, single or in groups. Herring-bones.

(3). Triangles.

(4). Trapezia.

(5). Lozenges, plain.

(6). Lozenges, ornamented, either by quartering (with lines joining the angles), or by drawing another lozenge within. The background may be wholly or partly pocked away.

(7). Crosses and saltires.
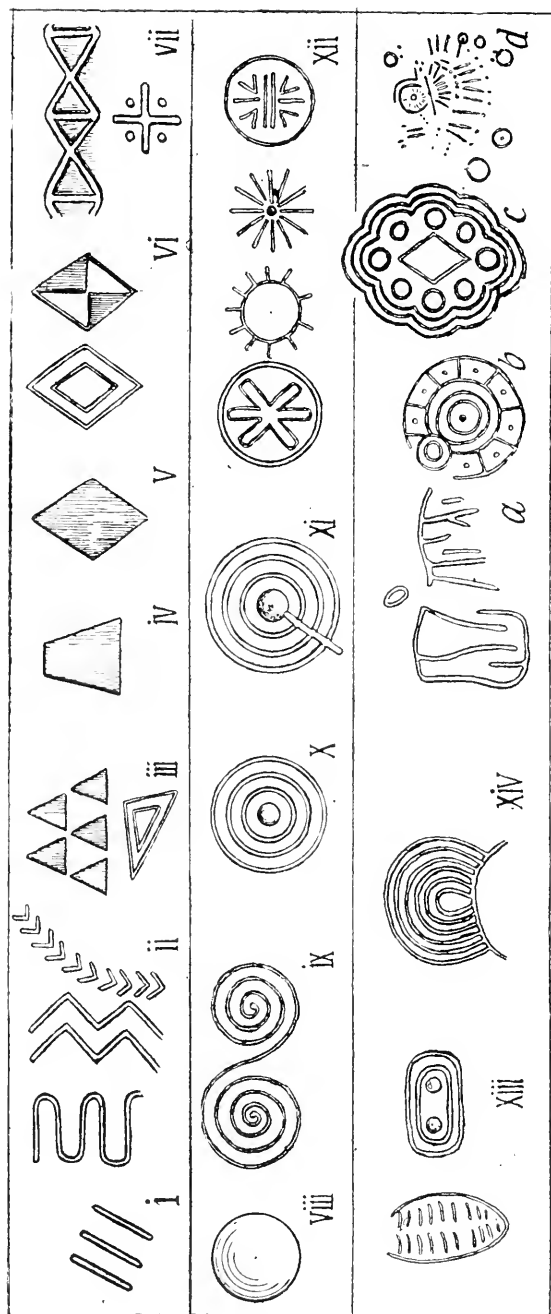
Fig. 83—Alphabet of Bronze Age Symbolism

Curvilinear Patterns

(8). Cup-hollows.

(9). Spirals.

(10). Groups of concentric circles, usually with a cup-hollow at the centre.

(11). Similar groups, with a radial channel cutting through the surrounding circles.

(12). Circles with radii marked in various patterns.

(13). Ovals.

(14). Segments of concentric circles.

In addition to these there are a number of variant forms, of compound designs, and of groups of apparently random lines, scarcely capable of classification. There are also figures which seem to represent human faces and animals.

VI. We cannot here give a full description of all the existing examples of bronze-age petroglyphs in Ireland ; like the pottery, such a work would form ample material for a separate monograph. The following selection contains the most important :—

I. *Cluain Fionn-locha, King's Co.*—At this place there is a slab which is one of the most important prehistoric monuments in Ireland (fig. 84). It does not properly belong to the bronze-age series ; its analogies are entirely neolithic. It measures 9ft. 9ins. by 8ft 3ins. and is covered with incisions which are (1) cup-marks, (2) foot-shaped indentations, (3) crosses, and (4) marks consisting of vertical strokes with a circle at or near the top ; in some the stroke projects above the circle, and is capped with a knob.

The close analogies which this stone presents with certain very early Neolithic sculptures in Spain (analogies which Professor Breuil was the first to point out) enable us to interpret these marks to some extent. The marks enumerated above as No. 4 are certainly stylised figures of men ; the knobbed tops representing their heads, the circles their arms in the attitude called " akimbo." One or two of them seem to hold

axes or other weapons. The cross-like figures are also probably men—perhaps representing men of another tribe. It is noteworthy that the looped-men figures are confined to one side of the stone, the cross-men figures to the other side ; and that the foot-marks are also for the greater part confined to the side with the cross-men. It is perhaps not very far-fetched to see in this most remarkable, and in the

FIG. 84—SLAB AT CLUAIN FIONN-LOCHA

islands of northern Europe unique, sculpture, a record (such as the Bushmen of Africa have left us painted in their caves) of a battle between the " loop-men " and the " cross-men," where the former put the latter to flight. The cup-marks scattered among the " cross-men " may even indicate the number of severed heads !

In any case, the similarity, not to say identity, between this sculpture and the Spanish petroglyphs and paintings which recent research has brought to

light, is highly suggestive. It indicates a direct communication between Spain and Ireland, not merely during the early stages of the Bronze Age (to which the halberds are a testimony) but even in the remoter times of the Neolithic Age.

II. *Loch Craoibhe, Co. Meath.*—The greatest series of bronze-age sculptures is certainly that to be seen in the carns of the ancient cemetery capping the hills near Oldcastle. Circles, spirals, zigzags, and other rectilinear and curvilinear figures abound. We give here one example (fig. 85) ; a long series of very accurate drawings will be found reproduced in the
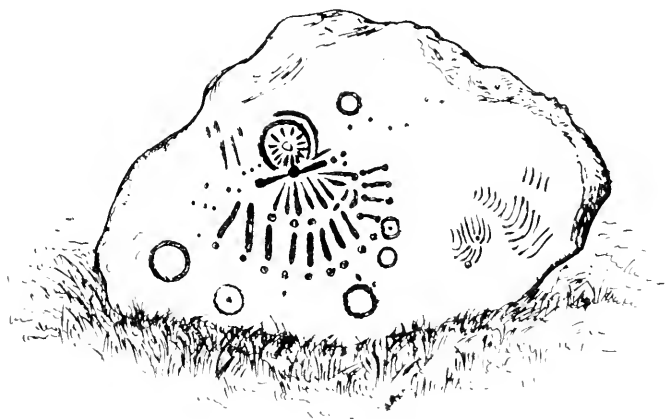
FIG. 85—SCULPTURED STONE, LOCH CRAOIBHE

Proceedings of the Society of Antiquaries of Scotland, vol. xxvii, p. 294 ff.

III. *Brugh na Boinne, Co. Meath.*—In the great cemetery near Droichead Atha there are three outstanding tumuli, Dubhadh, New Grange, and Cnoghbha. The last of these is still unopened ; the two former contain chambers of considerable size, built of large stones, many of which are covered with spirals, concentric circles, zigzags, and other symbolic figures. The chambers are more fully described in

P

a later chapter.[1]   One stone from the surrounding
kerb of New Grange is here shewn (fig. 86).
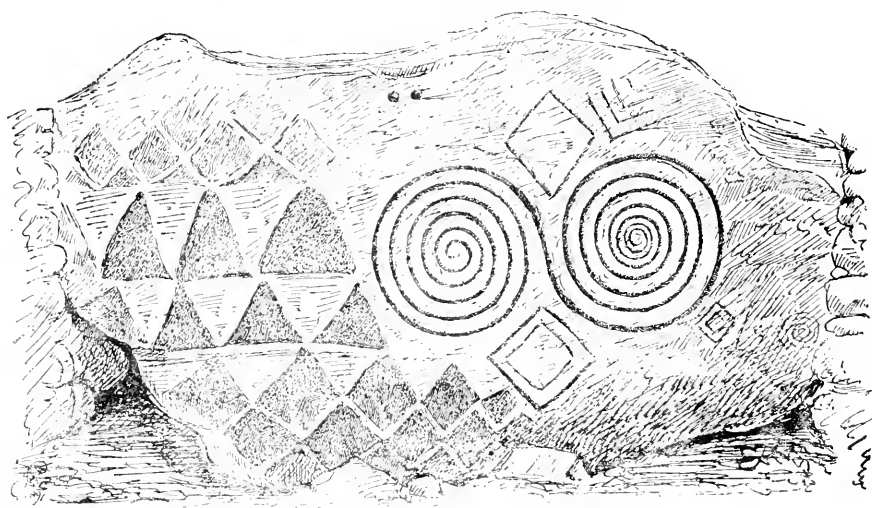
FIG. 86—SCULPTURED STONE, NEW GRANGE

IV. *Castle Archdale, Deerpark, Co. Fermanagh.*—
This is apparently a single grave, lined with stones,
which are covered with sculpture. One of the figures
seems intended to represent an animal. I visited
the site in Easter 1920, but was unable to verify the
drawings (due to W. F. Wakeman),[2] as the stones are
uprooted, placed face downward, and almost entirely
buried.

V. *Seiseadh Coille Greine, Co. Tyrone.*—There is
here a tumulus with a stone chamber, the stones
covered with spirals and other ornament. The only
extant illustration of this remarkable monument is
totally inadequate.[3] There are ten stones lining the

[1] A large number of photographs and drawings of the sculpture
will be found in the late Mr. George Coffey's monograph, *New
Grange and Other Incised Tumuli in Ireland* (Dublin, 1912).

[2] Published in JRSAI, vol. xv, p. 543 ff.

[3] Since the above was written Mr. M. C. Burkitt has published
photographs of some of the carved stones in his *Pre-history*
(Cambridge University Press, 1921).

chamber, about 3 feet in height. Beginning at the left-hand side of the entrance, the first has no sculpture ; the second has three irregular squares, placed concentrically ; the third has a faint spiral and a doubtful " feathering " of short strokes ; the fourth has a fine spiral ; the fifth has a broken spiral, and a peculiar labyrinth-like design, shaped like a lozenge with the upper oblique sides crossing at the top angle ; the sixth has a magnificent pattern consisting of a group of concentric circles, surrounded by groups of concentric semicircles ; the seventh has one cup-mark ; the eighth has one group of concentric circles ; and the ninth and tenth stones are blank. In addition, there is a single stone standing in a neighbouring field, the face of which is divided into two parts by a diagonal row of cup-marks ; on both sides there are groups of cup-marks, spirals, concentric circles, and star-like radiating figures.[1]

VI. *Cnoc Baine, Co. Tyrone.*—A similar tumulus, now erased, exposing the stones of the central chamber. Some of these bear groups of spirals and zigzag patterns. In the middle of one of these (fig. 87A) sculptured surfaces there is undoubtedly a human face.

VII. *Cnoc na Seamar, Co. Sligo.*—In the immediate neighbourhood of the great dolmen-field of Ceathramhadh Mór, three or four miles from the town of Sligo, there are the remains of a similar stone-lined grave ; no trace of a covering tumulus remains. The sculpture is rather late in type, approximating to the form of La Tène decoration ; it is probably the latest of the series. One of the stones appears to bear the stylised figure of a woman (fig. 87B).

Of the numerous stones and rock surfaces bearing cup-and-circle patterns, which do not differ essentially from those found in England, Scotland, and elsewhere in Northern Europe, we may mention remarkable examples at Ath an Charbaid, Co. Kerry

[1] This stone is also figured in Mr. Coffey's book.

(fig. 88) ; a rock-surface near the fort of Steidhg, in the same county ; and another at the other end of the country, at Magh-bhfiadh, Co. Donegal.
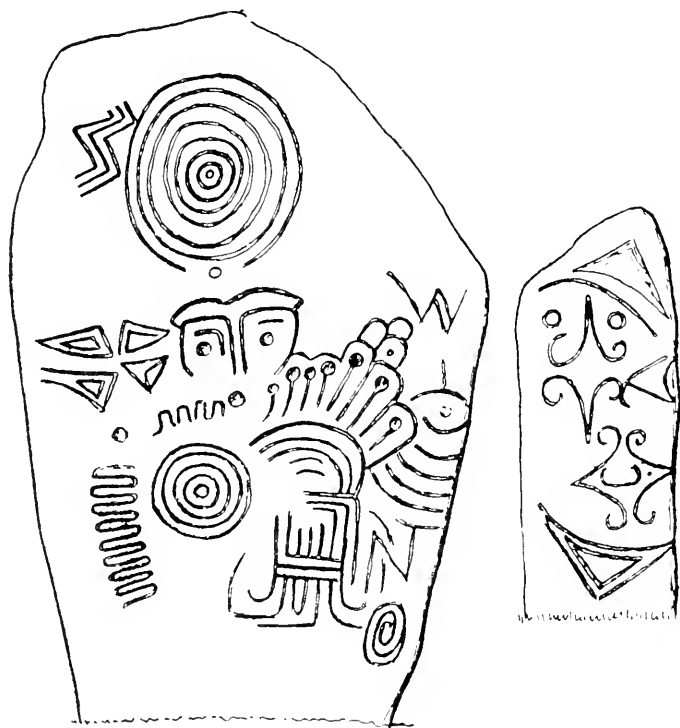
FIG. 87—STONES AT CNOC BAINE AND CNOC NA SEAMAR

Mention should also be made of a remarkable standing stone at Cuan an Bhainbh, Co. Wexford (fig. 89). This is a smooth pillar, 9ft. 6ins. high. On one side there are three cups making an inverted triangle ; it is probable that these represent a human face. The next side has also some cup-marks. On the third side there has been an Ogham inscription, now totally defaced. The fourth side is blank. The stone has thus had a history in three stages : it has been a bronze-age idol, adapted later as the memorial stone of a pagan chieftain of the late Iron Age, whose
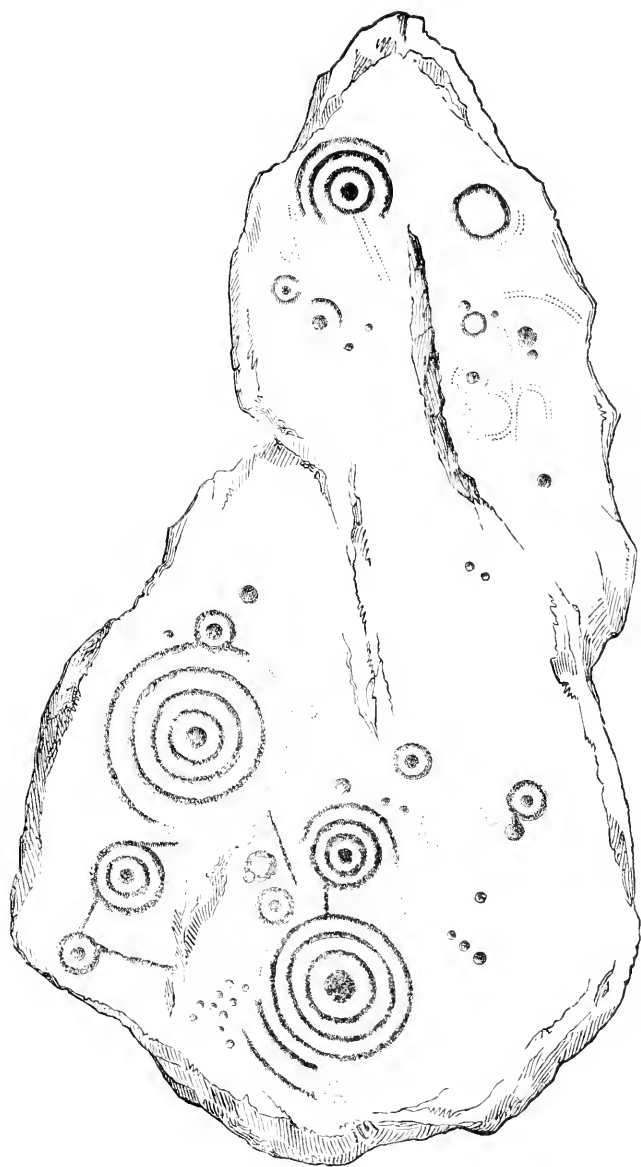
FIG. 88—SCULPTURED STONE AT ATH AN CHARBAID

S face

E face

N. face

W. face.
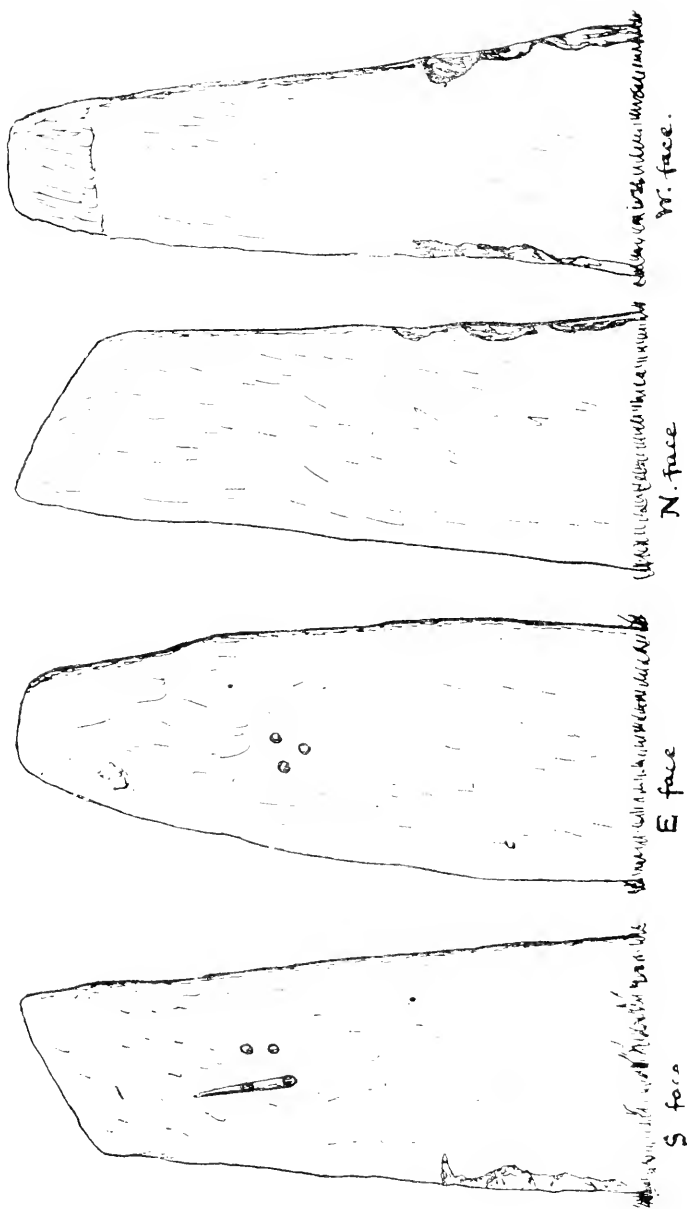
Fig. 89—Standing Stone at Cuan an Bhainbh

memorial inscription was destroyed as being heathenish by an iconoclast of the early Christian period.[1]

VIII. This leads us to a fuller consideration of the meaning to be assigned to these remarkable sculptures.

The representations of human faces, human figures, and animal figures—except those on the slab at Cluain Fionn-locha, which lies apart as representing an earlier phase of art—cannot be dissociated from the representations, or rather suggestions, of human faces and figures in such relics as the famous drums of limestone from Folkton Moor, Yorkshire ; the neolithic burial caves of the Marne region ; the rude idols found by the brothers Siret in Spain ; and similar figures. These are all found associated with sepulture ; and we may assume, without undue levity, that these figures depict some deity of the dead. The aniconic pillar-stones found in a burial carn at Ceathramhadh Caol, Co. Sligo, in New Grange, and in Baile na hAite, Co. Down, as will be described in a following chapter, are also probably figures of the same or an analogous divinity. The figure at Cnoc na Seamar seems to represent a woman, like the sculptures in the Marne caves : an indication that the divinity of the dead is a *goddess*.

The stone at Cuan an Bhainbh is of a different type. There is no evidence that it was originally a sepulchral pillar ; more probably are we to regard it as an idol, bearing the face of the divinity immanent within it. Its subsequent adaptation as a memorial pillar stone does not concern us at the present stage of our study ; but it is relevant to notice that the Christian who destroyed the Ogham—doubtless because it derived the descent of the deceased from some Celtic god— was ignorant of the meaning of the three cup-marks on the opposite face ; otherwise he would have certainly defaced them also. In the chapter on Religion (Chap. IX) we shall have something further to say about such standing stones.

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[1] For the destruction of Ogham inscriptions reference may be made to the companion volume on Celtic Ireland.

With regard to the other symbols, the most striking fact about cup-and-circle groups is their universality. Not only in Scotland, which, as cannot be too often said, forms one archaeological province with Ireland, but in remote countries such as America and the islands of the South Seas, have petroglyphs been found bearing extraordinary resemblance to those on the Irish stones.[1] The ceremonial drawings made by the Arunta of Central Australia are also practically identical in appearance with some of the Irish symbols.[2] The latter are closely connected with totemistic ceremonies, and the designs are purely conventional representations of various parts of the totem animal, such as could not be explained without the aid of a native interpreter. Remembering this, we must be cautious in endeavouring to interpret the symbolism of tribes extinct long generations ago.

A meaning may, however, be assigned to a few of the symbols in the " Alphabet " with at least a show of reason. The triangles and trapezia resemble flat axe-heads ; and remembering that quite unmistakable representations of flat axes, hafted, figure among the petroglyphs of certain monuments in France, we may perhaps be still on fairly solid ground if we suppose that this resemblance is not unintentional. The axe or hammer is the instrument of the thunder-god ; and so we may interpret the zigzags as his lightnings, or (less probably) the waters of his storms. For the lozenges, I have elsewhere suggested the interpretation, from which notwithstanding some adverse criticism I have seen no reason to withdraw, that they represent the head of the bull-roarer, the sacred instrument almost universal in primitive mysteries.[3] Concentric circles with a radial line closely resemble the labyrinthine patterns which find their highest expression on the coins of Crete ; and so these may perhaps

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[1] As a single example see M. Archambault, *Les mégalithes néocalédoniens* (L'Anthropologie, xii, p. 257).

[2] See Spencer and Gillen, *The Northern Tribes of Central Australia*, p. 737, ff.

[3] PRIA, xxxiv, C, p. 387.

suggest a place for ceremonial dances, and thus the sacred dance itself. This interpretation also I have discussed at greater length elsewhere (*loc. cit.* in last footnote). At Hollywood, Co. Wicklow, there is a stone with a device engraved upon it quite remarkably resembling the Cretan Labyrinthine pattern (fig. 90).
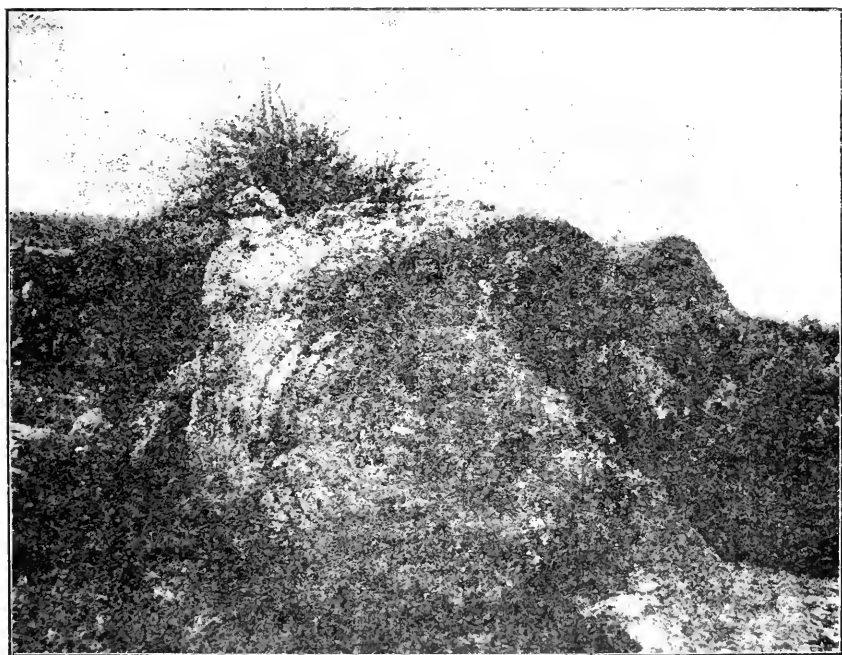
FIG. 90—SCULPTURED STONE AT HOLLYWOOD

The compound figures, represented diagramatically on fig. 83, may possibly be interpreted—(*a*) at New Grange, as a rude animal figure : it has, however, been compared, with very doubtful propriety, to the Scandinavian ship-figures ; (*b*) at Loch Craoibhe : can this possibly be meant to represent a planet circling round its primary ? (*c*) at New Grange : this device I have elsewhere endeavoured to explain as a dance (indicated by the triple invecked oval) round a stone circle (represented in plan) accompanied by the bull-roarer (represented by the central lozenge) ; (*d*) again, at Loch Craoibhe (see also fig. 85). This possibly represents the rays streaming downward from the sun.

But the circular ornaments are, on the whole, less easy to explain, even conjecturally, than the rectilinear figures. Some of them may be figures of the sun, moon, or other heavenly bodies ; but in the Australian figures reproduced by Spencer and Gillen (*loc. cit.*) precisely similar groups of concentric circles denote wells, trees, and women, according to the exigencies of the tradition which the designs are intended to illustrate ; and there may have been no greater definiteness in the interpretation of bronze-age symbols.

Recently it has been suggested that pairs of spirals, side by side (fig. 83, ix), are intended to represent a pair of human (or divine) eyes. Such pairs are frequent in the sepulchral chambers, and if this explanation, which is very reasonable, be sound, then this device takes its place with the other naturalistic figures enumerated a page or two *ante*. It is easy to imagine the terror which would be inspired in a bronze-age thief who dared to penetrate into the sacred chamber, by seeing these gigantic spiral " eyes " glaring at him through the gloom.

In Aegean art the decorative groups of concentric circles are derived by degeneration from those containing spirals. Spirals and concentric circles are rarely found together in Irish bronze-age art, which may possibly indicate a similar evolution ; but we cannot be sure of this. The technique of the sculpture

in the chamber of Dubhadh is older than that in the adjacent chamber of New Grange ; but concentric circles dominate in the former monument, and are all but absent from the latter.

All that we can say with any assurance with regard to the interpretation of petroglyphs is that their close connexion with sepulture shews that in some unknown form and in some unknown tongue they express the universal prayer—*Lucem Tuam et requiem dona Domine huicce sepulto !*

CHAPTER VII

I. The subjects that have occupied us thus far have been of a tangible nature. We have had before us the implements and utensils of stone and bronze and pottery, and have been able to deduce something of the process of evolution which the types they represented had undergone. We have now to turn to a harder task. We have to look behind the tools, which we can see and handle, to their long-vanished makers ; and we have to endeavour, so far as may be possible, to reconstruct their methods of thought, and their outlook on the world with which they found themselves surrounded.

Such a task may well seem hopeless. We may dig the mouldering bones from the graves, and measure and classify them ; but we cannot fit a tongue to them which will voice the thoughts that their owners thought, three to four thousand years ago. Not a scrap of writing has come down to us from that distant time, nor even any document of which we can say that it was copied from writings of the Stone and Bronze Ages ; for if anything is certain about the past, this at least is sure, that writing was unknown in Ireland during the Stone and Bronze Ages. More hopeful might seem the ancient traditions preserved to our day, before schoolmasters and newspapers put

other and not always better ideas in their stead ; but even here we have no touchstone by which we can distinguish with assurance between the primitive stone- and bronze-age elements in the common stock of tradition, and the accretions which should be ascribed to the intervening Age of Iron.

This may almost seem to write " No Thoroughfare " over the pathway which we wish to traverse in the present chapter.   But we need not altogether despair. There are certain indications from which we can draw deductions ; and the analogy of manners and customs among primitive races elsewhere, often remote and racially quite unconnected with the people which it is our special concern to study, throws no little illumination on the problem before us.   The picture we can draw can never be anything but imperfect ; but we need not lose hope of making it a picture.

II. First then let us in a few words remind ourselves of what was said at the beginning of our study. There is evidence of a double strand in the population of Ireland previous to the Norman conquest in 1172 A.D. ; a dark and medium-statured race, allied with the Mediterranean peoples whose most typical representatives are now to be seen in Spain ; and a tall fair-haired race, allied to the Nordic peoples whose most typical modern representatives are in Scandinavia.   Further, the Mediterranean tribes were the earlier, aboriginal, population, and were subdued and reduced to a subordinate position by the Nordic invaders.   The Nordic people seem to have come in about the beginning of the Iron Age, and are not improbably responsible for introducing the Iron culture and the Celtic language to Ireland.   Almost to the end of the history of Ireland as an independent country we find this division clearly maintained.   It lies at the basis of the caste system, which is safeguarded by numerous stringent rules and regulations in the Brehon laws ; and a tacit assumption of the distinction between freeman and bondman, between the fair-haired people and the dark-haired people, is

always in the background throughout the whole range of Irish literature.

Our special concern in this volume is with the earlier people, the *daerchlanna* or unfree tribes of the later literature ; and our present subject is their social organisation.   It will perhaps make the study a little more intelligible if we start from a known point.   Let us consider as briefly as possible what is the social organisation of our own community, and working back from that let us endeavour to see by contrast what were the peculiarities which distinguished that of the aboriginal tribes of Ireland.

III. We may consider a social organism as consisting of a scale of units, each major unit being composed of aggregates of the minor units next below it in the scale.   The lowest unit in the scale is the individual, man, woman, boy, or girl.   The next unit is the family ; and, according to our system, the family is regarded as consisting of a man and his wife with the children born of their union.   Of this community the man is recognised as the head ; the bride in the marriage service is required, at least as a matter of form, to promise love, honour, *and obedience* to him. Technically a family thus constituted is known as a patriarchal monogamous family ; and these names reveal the possibility of a family being constituted on quite different systems, denoted by names that have a converse meaning.   We shall presently hear of families constructed on a *matriarchal* basis—in which the woman is the head ; and the rigid law of our social system which forbids more than one wife and more than one husband (expressed by the word *monogamous*), is by no means universal among the families of the earth.

The next unit above the family of parents and children would be the kin or clan ; but this unit is practically obsolete in our modern social system.   The John Browns may be on terms of the closest intimacy with their neighbours the Robinsons, though there is no sort of kinship between them ; while at the same

time they may be in deadliest enmity with their own cousins, the William Browns.   In other social organisations, however, we may find a system in which the clan unites all its members against the world, in a sort of indissoluble freemasonry to which no outsider can be admitted.   Indeed, in such a system, the family, to which our social order attaches such importance (chiefly on account of its necessity to the nurture and training of children) sinks into comparative insignificance, and even the individuality of the individual (if the reader will pardon the clumsy expression) is absorbed in the paramount importance and claims of the clan.   The Bedawin offer a good example of this. If a man of kin A should kill a man of kin B, the B people do not say " So-and-so's blood has been shed " : they say " *Our* blood has been shed "—as though the life-fluid of the whole kindred has been tapped at its reservoir.   In consequence, the desert law of revenge follows with relentless logic.   The blood of the murderer's kin must be tapped likewise ; *any* member of the injured kin may, and when opportunity arises must, kill *any* member of the murderer's kin, whether he had anything to do with the original crime or not.

Among ourselves, the few relics of a kin-unit hardly count, except as a matter of sentiment.   Indeed, in our system, there is scarcely any unit of importance left between the family and the state, which contains all the rest.   There are no doubt municipal, parliamentary, and other divisions, but these are political rather than social units ; a man can without hindrance pass from one to another, severing his connexions in the one, and forming new connexions in the other, at his pleasure.

It may therefore be said that in our community the social organisation is reduced to the simplest practicable terms.   There are those who would seek to simplify it still further by abolishing the family, admitting no intermediary between the individual and the state.   But these theoretical refinements of civilisation do not here concern us.

Civilisation can be gauged by the degree of *complexity* in the specialisation of trades and tools. Contrariwise, civilisation can equally be gauged by the degree of *simplification* of the social order. The lowest savages whose manners and customs have been studied with any fulness, the Australian blacks, have their society modelled on a system whose complications it is extremely difficult to understand. And it may be taken as a general rule that the higher in the scale we proceed, the simpler does the system become.

IV. We may say that in all cases the primary basis of such systems is kinship. Kinship, generally, may be defined as the connexion between one person and another, based on the belief in descent from a common ancestor. That ancestor may be a god or a man, or even an animal or an inanimate object ; but all persons who claim descent from the ancestor are united against all persons who cannot claim that advantage. The fact of kinship may be expressed and understood in different ways ; and still more the notions of the degree of kinship may vary surprisingly. The Australian black calls certain old men and old women of his tribe, whom we should consider scarcely related to him at all, by names which denote the relationships of " father " and " mother " respectively : similarly he calls certain of his own contemporaries " brother " and " sister " ; and it is said to be difficult to make him understand the narrowly defined physical relationships that we associate with those words.

V. How, then, is kinship to be traced ? Here we come on the first important basis of classification. Our custom is to trace descent by the male line, father to son ; and the number of people who can name their ancestors in that line for eight generations is probably greater than the number who can give the surnames of their eight great-grandparents. But there are communities in which the descent is reckoned through the female line. As a rule this is found only at a comparatively low stage of civilisation.

There are three possible reasons for this method of

reckoning kinship. The first is simply the ignorance of the savage of the physiological process of conception and birth, which have to be learned like everything else. The Arunta tribe of Australia even yet are alleged to be unaware that the father has anything to do with the existence of the child, which they are said to attribute to a spirit that has entered the mother's body. This primitive notion may lie at the basis of the matrilinear succession in many cases ; for where there is no father recognised, descent necessarily counts from the only parent taken account of.

The second reason is similar. In a community where there are few women, a plurality of husbands may create a doubt of the parentage of the child ; and though as in Thibet (where such a social system exists) there are conventions by which the doubt is resolved, still this may not always be the case.

Thirdly, we can explain the matriarchal system by considering the circumstances of a community of hunters. The men are away all day in search of game ; the women remain behind in the dwelling. On the woman devolves the care of the home, the hearth, and the children. In the woman the family and tribal traditions find their repository ; and by virtue of these she rules the household.

VI. Now we have very strong reasons for believing that the pre-Celtic people were organised on a matriarchal basis. One of the most remarkable facts bearing on this is the ascription of the ancient palaces and sanctuaries of Ireland without exception to the foundation of a woman. Tara by Tea or Tephi ; Emain Macha by Macha ; Tailltiu and Tlachtgha by the women whose names they bore. Never mind whether these women had any real existence or not, or whether the names found in the stories which we have about them are mere inventions for etymological purposes. There is probably some basis for the stories themselves, and it is very remarkable that in almost every case there was a tradition that a woman had founded these ancient palaces.

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An important fact, preserved to us by Bede,[1] is here in point.   It is more then merely probable that the Picts of Scotland were cognate with the aboriginal race of Ireland which we are at present studying.   Now Bede tells us that the kings of the Picts of Scotland were succeeded not by their sons but by their sisters' sons.   This means that the Pictish monarchy was organised on a matriarchal, or rather a matrilinear basis.   It is not to be supposed that in any primitive community a succession of chieftains of the physically weaker sex would be permitted ; but it was recognised that while for practical purposes the actual muscle must be that of a man, the man held office by right of his descent from, or connexion with, a woman. Thus the Pictish king was not the son of his predecessor, but the son of the woman nearest of kin to the predecessor.   This is confirmed by the testimony of the Pictish Chronicle, a document written in Latin in the time of Cinead son of Mael-Choluim, A.D. 971–995.   The work is divided into three parts ; a brief account of the origin of the Picts, founded on Isidore ; a bald list of the native Pictish kings ; and a fuller account of the Celtic kings of Scotland after the union of the Celtic invaders with the aboriginal Picts, from Cinead mac Ailpin, 844 A.D., to Cinead mac Mael-Choluim, just mentioned, under whom the work was compiled.[2]   Some of the early Pictish kings were doubtless mythical ; but from 583 to 840 we have a certain amount of corroborative evidence afforded us by the Irish annals, especially the Annals of Ulster ; and between those dates we may take the list as authentic.

Professor Zimmer, who has studied this list with special care,[3] has pointed out the following remarkable features discernible in it :—

[1] *Historia Ecclesiastica*, I, i.

[2] The text is printed in Skene's *Chronicles of the Picts and Scots*.

[3] See *Das Mutterrecht der Pikten*, in the *Zeitschrift der Savigny-stiftung für Rechtsgeschichte*, xv, 277 : translated in Henderson's *Leabhar nan Gleann*.

(1). There is a limited number of king's names ; they occur over and over again.

(2). The kings' fathers' names are given in each case ; but none of the kings' fathers appear as kings.

(3). The kings' names are all Pictish, but the kings' fathers' names are not necessarily so. Some are Irish, others Cymric, others again Anglian or Saxon. This is especially important, as we shall see presently.

These facts would be unintelligible under a patriarchal system ; but if we assume that the king was succeeded by his sister's son (failing a brother ; in one or two cases a brother succeeds) then all is clear. The king reigns by virtue of his mother ; the father is of no importance, is not a king, and as often as not may be a foreigner. And as we have seen above, Bede at the beginning of his *Ecclesiastical History* reports to us that this was actually the case ; and it is interesting to notice that the system seems to Bede so extraordinary that he seeks to explain it, without much success. The same fact is noticed in Irish literature, and there also we meet with an attempt to explain it. For we are told that the Picts came to Eremon, the first Milesian king of Ireland, to beg for a league and for wives ; that Eremon granted to them the wives of the chieftains who had met their deaths in the endeavour to seize Ireland ; and that in return he extorted an agreement that all honours and dignities should pass, among the Picts, in the female line. This shows that the fact of matrilinear succession among the Picts attracted the attention of both Saxon and Celtic writers ; that it seemed to them something that called for explanation ; and that they did their best to find an explanation by that flickering candle called " the light of nature."

We now begin to see the significance of the ancient story related above (page 29) to the effect that the leader of the first expedition to Ireland was the woman Cesair : also that the leader of the first attack of the Fomhoraigh was another woman, Lot. These tales have come down to us out of, or at least referring to,

a matriarchal society, in which it seemed natural for the woman to take the initiative.

Zimmer also shows us that when the Irish-Celtic kings succeeded to the Pictish kings in the united kingdom of Celtland and Pictland in Scotland, the matriarchate did not yield to the patriarchate without a struggle. Cinead mac Ailpin, the first king of the united peoples, died A.D. 857, according to the Annals of Ulster, and there is named *Rex Pictorum*. Under the Celtic system he might have been succeeded by his son or his brother ; under the Pictish system he should have been succeeded by his sister's son or his brother. In point of fact his brother Domhnall succeeded, so that neither party had ground for complaint. Domhnall was succeeded in 862 by his son Constantine ; but Aedh, brother of that Constantine, was murdered, and his sister's son placed as king in his stead ; apparently a last attempt of the Picts to establish their own system over the united throne.

VII. A number of other ancient authors give us information which corroborate these deductions. National pride has endeavoured to explain away Caesar's well-known statement about the inhabitants of the interior of Britain, namely that ten or twelve men would have wives in common, the children being reckoned to the man to whom the wife was first given. There is no use whatever trying to get rid of this passage. It simply describes a community whose organisation was practically identical with that of the Nayars of Malabar, the typical example of this form of social order. As Caesar knew nothing of the Nayars, nor his informants either, the statement cannot have been invented.

Strabo and Dio Cassius both speak of a community of wives, the former in Ireland, the latter among the Scottish Picts ; and Hieronymus and Solinus bear testimony to the same effect. We need not here discuss at any length what these writers say. The chief remark that has to be made about them is that they evidently completely misunderstood what they

were writing about. They were confronted with a social scheme totally different from that to which they were accustomed. They could not understand it, and certainly did not try to do so ; it was not unnaturally repulsive to their instincts ; and in consequence they wrote off the people, with whom they professed to deal, as savages having no regular marriage laws, but what amounted to a complete promiscuity. Modern apologists, as ignorant as the ancient writers themselves, feel aggrieved at having these unpleasant things said about their ancestors, and get out of the difficulty easily but unscientifically by calling the ancient writers liars ; which is the one thing they certainly were not. In fact, both the ancient writers and their modern critics forget that society can be built on more than one basis. The scheme that has grown up among ourselves we consider the best and most suitable, and we would not willingly change it ; but other schemes have happened to grow up in places subject to other conditions, and while we may rightly consider them inferior to our own, we have no right to dismiss them contemptuously with abusive names.

VIII. Indeed, every analogy would lead us to infer that the Pre-Celtic social system, of which we have a fragment in the Pictish law of succession, so far from being based on mere promiscuity, was highly complex. And here we come to a point on which Zimmer has touched, though he has overlooked its especial importance. This is the fact that so many of the kings' fathers among the Picts bear foreign names, Gaelic, Cymric, or Saxon. It is a clear indication that with the matriarchal system of descent there was coupled, as is generally the case, a law of *exogamy*.

The word " exogamy " implies that a man must seek his wife outside the tribal unit to which he happens to belong. The converse expression is *endogamy*, in which marriages take place within the tribal unit. With us Mr. Smith is at perfect liberty to marry Miss Smith, provided that certain definite relationships, clearly tabulated in the law on the

subject, do not exist between them. In an exogamous community the restrictions are far more drastic ; such a marriage is absolutely prohibited, even though the parties may have no traceable blood relationship. One of the Smith tribe must seek his bride from some different stock.

A curious result follows from this. If a Smith man marries a Robinson woman, under the matriarchal system all the children will be Robinsons ; they will belong to the mother's tribe, which by the law differs from that of the father. A moment's thought will show that while a man's own children will thus belong to a tribal unit differing from his own, his sister's children will belong to his own unit. This result is recognised among all matriarchal communities : with the result that sometimes a man dare not chastise his own children, for fear of the vengeance of the tribe to which they belong ; but when chastisement is necessary he must beg their maternal uncle to administer it, for naturally a man may do what he likes to his sister's children.

Further, this principle of exogamy explains another point. Under the ordinary social system of civilised Europe, a wedding of father and daughter is unthinkable. In an exogamous matriarchate it may be quite right and proper, for the two people belong to opposite tribes. Now such marriages do appear several times in the Irish genealogies ; and the late redactors who have transmitted the genealogies endeavour with indifferent success to explain them away. But there is no necessity to do so when we have identified the social system under which they are legal.

IX. In speaking of the tribes I have up to now used as convenient labels modern surnames with which we are familiar. But we must now enquire what substitute for these surnames was in use among the people with whom we have to deal. And this leads us at once to a consideration of the very extraordinary and widespread institution of *totemism*.

The word totem is derived, or rather corrupted,

from a word in one of the North American Indian languages. It is defined by Sir James Frazer as meaning " A class of material objects which a savage regards with superstitious respect, believing that there exists between him and every member of the class an intimate and altogether special connexion." A totem may be a species of animals—not one separate specimen, but the whole species : a species of plants ; or even something inanimate, as a stone or one of the heavenly bodies. There are three kinds of totems ; the clan totem, common to a whole clan and passing by inheritance from generation to generation ; the sex totem, common to all the men or to all the women of the tribe ; and the individual totem, belonging to a single individual and not passing to his descendants.

Now, briefly, the connexion between the clan and its totem is partly social and partly religious. The members of a totem clan call themselves by the name of their totem ; regard themselves as descended from a being of the totem species ; and consider all creatures of the totem species as kin to themselves. Thus, to give merely a single example,[1] the turtle clan of the Iroquois or Mohawk Indians regard themselves as the descendants of a large and fat turtle, which being burdened with its cumbersome shell in walking, contrived by great exertions to throw it off, and so gradually developed into a man, their progenitor. The totem being kin to the tribe, it would be as criminal an act to kill or eat the flesh of the totem animal as it would be to commit a similar outrage on the person of a tribesman. There is a large variety of such prohibitions on the use of the totem. Sometimes the totem must not be looked at or touched. A Samoan tribe, which has the butterfly for totem, must not perforate the three eyes of a cocoanut when they wish to drink of it ; only one or at most two may be perforated. For it is supposed that the three eyes together are a kind of picture of the butterfly ; and to perforate

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[1] Borrowed from Frazer, *Totemism and Exogamy*, vol. i, p. 5.

all three would be to mock the totem, and so bring down its vengeance on the tribe that treated it with so little reverence.[1]   Elsewhere the totem is fed, and very often if the totem be found dead it is buried with lamentations.   Aelian tells us that the people of the island of Seriphus in the Aegean Sea, if ever they caught a lobster in their fishing nets, were careful to put it back into the sea ; and if they found a dead lobster they buried it and mourned over it as over one of themselves.   To this day there is a place in Spain where a sardine is buried solemnly every Ash Wednesday.[2]

These will suffice as specimens of the beliefs and practices of totemism.   The origin of this strange faith, if so we may call it, has not been satisfactorily made out.   And its most remarkable feature is that it is almost universal.   It is found in Australia, among the American aborigines, among the Semites, in India, among the Indo-Europeans.   It lies at the base of many of the otherwise inexplicable rites and beliefs of Classical Greece and Rome.   It is traceable in the dateless antiquity of the Early Stone Age.   In brief, we may almost say that wherever you find men that have developed out of primitive conditions, there you find relics of totemism.   Even our noble selves abjure the pleasure of eating horse-flesh, to which our Continental neighbours have no objection, and why ? Because the horse was the totem of the first Saxon invaders, whose mythical leaders were Hengist ("stallion ") and " Horsa."   We have inherited the prohibition, though we have forgotten its reason.

Now to show something of the importance of totemism in determining social relationships, I will give in outline the restrictions which correspond to our catalogue of prohibited degrees in one of the many tribes of New South Wales.   It will serve as an illustration ; and if anyone should feel inclined to complain that he

[1] *Op. cit.*, vol. i, p. 13.
[2] These instances are also borrowed from Frazer, in whose book there is a large collection from all parts of the world.

wishes to hear about Ancient Ireland and not about Australian savages, I can only say that we cannot understand the few fragments of fact which we can recover concerning social life in the Bronze Age in this country without coming to their study prepared by a knowledge of corresponding institutions elsewhere, which circumstances permit us to study in detail.

The tribe I have chosen is divided first of all into two classes, called Ngielbumurra and Mukumurra. The first law of the tribe is that marriage must not take place except between persons of opposite classes.

Further the classes are divided into two sub-classes each. The Ngielbumurra sub-classes are called Ipai and Kumbo ; the Mukumurra classes are called Murri and Kubbi. And each class has three totems ; the Ngielbumurra totems are the mallee-hen, the emu and the opossum ; the Mukumurra totems are the black duck, the bandicoot, and the kangaroo. As a man in either class may belong to one or other of the sub-classes, and to any one of the totems, it follows that there are six kinds of men, so to speak, in each class, or twelve in the whole tribe, and similarly of women.

Every man has a choice of wives among three of these different kinds of women. We need not do more than take a single example for our present purpose. Take a man of the Ngielbumurra, sub-class Kumbo, totem emu. This man must marry a Mukumurra woman ; she may be either Murri or Kubbi ; but if Kubbi she must be a kangaroo, and if Murri she must *not* be a kangaroo, but must belong to one or other of the two remaining totems. There are similar restrictions on all the other kinds of men, and reciprocally each woman of the tribe can have a mate from one of three possible kinds of the opposite sex.

The children belong to the class and totem of the mother, but to the opposite sub-class. Thus, in one of the cases cited above, if our hero marry a Mukumurra Kubbi kangaroo, the children will be Mukumurra Murri kangaroos. Obviously this prevents the

marriage of parents and children, which as we have just seen is quite possible under other exogamous systems.

We have seen in the descent of the kings of the Picts, the last surviving organised relics of the Pre-Celtic population of these islands, evidence for matriarchy and for exogamy.   We have next to consider whether there is any evidence for totemism.   And we have not far to seek.   In the invaluable paper on Early Irish Population groups, communicated in 1911 by Prof. MacNeill to the Royal Irish Academy, there are to be found lists of all the communal names which its author has found in the genealogies and elsewhere. Among these names we find Corcu Bibuir, " the beaver people " ;   Corcu Cuilend, " the puppy people " ; Corcu Oirce, " the pig people " ;   Corcu Tened, " the fire people."   Also among names ending with the collective ending *rige*, we have Bibraige, " the beaver people " ;   Artraige, " the bear people " ;   Boccraige, " the goat people " ;   Breccrige, " the trout people " ; Cattraige, " the cat people " ;   Cechtrige, " the plough people "—an example of a totem not an animal— Cnamrige, " the bone people "—an example of a totem being part of an animal, as often happens.   Osraige, the modern Ossory, denotes   " the deer people." There are other names that might be added to this list, but these will suffice for the present.   It may be added that there is reason to believe that these tribal names belong to a form more definitely connected with the aborigines than with the Celtic invaders.

From this it follows that there were a number of communities in Ireland bearing totemic names, and that totemism was to be found in Ireland as elsewhere in antiquity.   Even among the iron-age invaders it was not unknown. The grotesque story that the mother of Oisín the poet was a deer can best be explained by supposing that she belonged to a fawn kindred, just as the Australian women of whom we were speaking a moment ago call themselves kangaroos, emus, and what not.   On the other hand, Fionn's

lieutenant, Diarmuid ó Duibhne, belonged to a boar totem ; he was under a prohibition never to chase a boar ; and he met his death as a result of breaking the *geis*.[1]

X. Of the growth and development of these tribes and of their mutual relationships we can say next to nothing. The country was probably first peopled by a small settlement in the North-East corner. These would spread gradually over the land, and would form communities, isolated by the long stretches of forest land which, thanks to the infesting wolves, were almost impassible barriers. Each tribe would then develop along its own lines, though probably in a fairly uniform course. A council of elders under the presidency of a chief would regulate its affairs, and would be the repository of its traditions and the arbiter of its customs and its actions. But really all that we can guess about the government of these early tribes is merely derived from analogy with other tribes which we can study more closely. The stone- and bronze-age people were the helots of the age in which the literature was written ; the story-tellers and the law-givers were not interested in their arrangements, which had been abrogated when their land was captured by the Celtic-speaking immigrants ; and they record little or nothing directly about them.

XI. The Celtic tongue made so complete a conquest of the speech of the aborigines that hardly anything is left of the latter. Efforts have been made to discover in the syntax of Irish and also of Welsh traces of an earlier syntax—just as traces of Celtic influence can be found in the syntax of such Irish-English expressions as " I am after going," " He has his window broken." This has not given any very satisfactory result, as we have unfortunately no Celtic language free from these theoretical contaminations with which to compare the

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[1] The story of Diarmuid gives a different explanation of the prohibition : but this is not exempt from the elementary and almost universal law, familiar to all folk-lorists, that a myth is always later than the " fact " which it seeks to explain.

insular dialects. The Celtic of the Continent is known to us only by a few short and shattered inscriptions, from which very little indeed can be gleaned.

More promising are the place names. There are many names (for instance *Dundrum*) the meaning of which is obvious, in this case " the fort of the ridge." Others are less easy to understand, as *Stillorgan*, which is an outrageous corruption for Teach Lorcain, " the house of Lorcan." Some place-names contain words now obsolete, but known from literary sources. It is a fascinating study, even when the names are so sadly and savagely corrupted as they are on Irish maps and railway-stations. We are led step by step from the easy to the difficult ; we solve the problems as they arise, by seeking out the oldest and most authentic forms of the names ; and at last we arrive at that most impressive thing, a mystery. We reach a wall that no man may pass. Within that wall are written most of the river names, and a good many of the mountain names ; the most striking and obvious natural features.   The land-divisions, towns, and villages, bear Celtic names, showing that we are to assign the artificial political divisions of the country to the later comers ; the rivers, and to some extent the mountains, bear names which cannot be explained as Celtic, and which must therefore be a legacy from the earlier inhabitants—though no doubt they have been modified by being transmitted to us through many generations of Celtic speakers. That boundary wall which no man may pass is the Holy of Holies of long-forgotten river deities, worshipped in the far-off ages before the knowledge of iron came into the country. If the flints found in the gravels of Larne are the oldest monuments of human workmanship in the country, the names of the rivers are the oldest monuments of human thought.

We have seen that Scotland preserves for us something of the Pre-Celtic social system in the succession of the Pictish kings. It also preserves for us something of the language that we are seeking. The Pictish

language lasted in Scotland down to the time of Colum
Cille, for he had to employ an interpreter in speaking
to the Picts. Had he lived a century earlier he would
probably have known the language from his infancy,
for there is every reason to believe that it survived in
Ireland to a comparatively late date. But perhaps
Colum Cille, as a scion of royalty, was as carefully
guarded from learning Pictish in his youth as were the
children of the squireens of a past generation from
committing the unpardonable social solecism of learn-
ing Irish ! Be that as it may, the Pictish language
certainly lingered in some parts of Scotland after it
had disappeared in Ireland, and moreover was written ;
for we possess some sixteen inscriptions found in the
East and North of the country, written partly in the
Ogham character, partly in minuscules, and once in
a very debased form of Roman capitals. These in-
scriptions have been studied by the late Sir John Rhys
with great ingenuity ; he endeavoured to make some
sense of them with the aid of modern Basque.[1] The
Picts being assumed to be a branch of the Iberian
race, whose chief representatives are settled in Spain,
this comparison is more natural than perhaps might
appear at first sight. Certainly no one has obtained
from these inscriptions any results of the smallest
value with the use of any Celtic language for com-
parison. What militates against any hope of complete
success along the lines followed by Sir John Rhys is
the scantiness of the material. The inscriptions are
all short, and many of them are very badly mutilated ;
some indeed are so much injured that they would be
useless even if the language in which they are written
were perfectly known. On the other hand, Basque
is known to us only in modern dialects ; there is no
ancient literature in the language from which to re-
cover the ancient forms. Irish and Latin are very
closely cognate languages ; but if we had only a few

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[1] *The Inscriptions and Language of the Northern Picts*, Proc. Soc.
Antiq. Scot. xxvi, p. 263.

short and broken inscriptions in Latin, and nothing else, it could hardly be expected that we should make much of them by comparison of their linguistic forms with those of Modern Irish. It is true, there are a number of short inscriptions in Spain to which the name Celtiberian is commonly given, which mostly consist, apparently, of proper names, but which otherwise are perfectly unintelligible. These may be in some early language cognate with modern Basque ; but to attempt to interpret the Pictish inscriptions of Scotland by the Celtiberian inscriptions of Spain would indeed be to interpret *ignotum per ignotius*.

To sum up, we have found scraps of evidence which when pieced together and explained in the light that comparative anthropology has to throw upon them, enable us to restore something of the tribal system of the Stone and the Bronze Ages in Ireland. We have seen that the stone-age settlers were scattered over the country, forming isolated communities which were the nuclei of separate and independent tribes ; that these tribes developed the principle of totemism—the germ of which they doubtless had brought with them from their previous home ; that they reckoned descent in the female line ; and that while polygamy was no doubt practised—we hear of a polygamous king of Leinster so late as the time of St. Findian of Cluain Iraird—there was unquestionably a code of forbidden degrees, or something analogous thereto, founded on one or other of the numerous systems of exogamy which have been systematised by students of primitive man throughout the world. And lastly, though we can never hope to recover anything significant of the language of this people, we have certain inscriptions which shew us what it was like, and from which we learn that while it may or may not have been cognate with the modern Basque, it was most probably not a member of the Indo-European family.

CHAPTER VIII

DWELLINGS AND FORTIFICATIONS

I. In approaching the subject of the dwellings and
fortifications of the Stone and the Bronze Ages we
are confronted at the outset with a serious difficulty.
How are we to distinguish between the fortresses
and dwelling-places of the stone-age and bronze-age
people on the one hand, and those of the iron-age
people who succeeded them on the other ?

To such a question excavation alone could give a
satisfactory answer ; and the great probability is that
even excavation would not in this case be very inform-
ing. Thanks to the almost superhuman labours of
Mr. T. J. Westropp, we have a large quantity of
material now available for the study of the plans and
the architecture of the ancient forts of the country ;
but we have as yet little information as to structures
underground and antiquities associated with them. It
is, however, in the last degree improbable that there is
much in the way of portable antiquities buried in the
ground ; excavations that have been conducted for
the purpose of finding such objects have been singu-
larly unsuccessful, and in many cases the fortress is
built on bare rock.

The first rough classification that presents itself is
a division into forts on land, and forts on water. The
former are the structures erected on *terra firma ;* the
latter are erected on artificial islands, constructed in

the lakes.   To such islands the name *crannog* is given
in this country.   Those that have been investigated,
if they have yielded anything at all, have been found
to contain rusty iron nails, horseshoes, and other odds
and ends of very late date ;   and we may take it as a
fixed point in this tangled subject that the Irish lake-
dwellings are all of the Iron Age at earliest.   In fact, the
crannogs are a kind of prototype of the Norman mottes.
The mottes are conical mounds, erected for supporting
the wooden tower that was the first fortress of the
intruding Norman baron—there are a considerable
number of these mounds still remaining, in places
where the Normans established themselves.   They
are the monuments of men who seized the lands of
the native peoples, reduced them to vassalage, and had
in consequence to protect themselves continually
against the vengeance of their serfs.   In like manner
the fair-haired Nordic invaders, who introduced the
Celtic language and the Iron culture—and who were
of the same race as their Norman conquerors—had
seized the lands of the bronze-age aborigines, and had
had to protect themselves against the wrath of their
vassals.   Accordingly they established themselves on
islands on the lakes ;   where there was no island they
made one.   I have said this much in explanation of
my passing over the lake-dwellings in the present
chapter on the Pre-Celtic dwellings and defences.

Of dwellings and fortresses on *terra firma*, literally
tens of thousands still survive.   Probably many perish
without any record of them being preserved, as more
land is put under tillage.   Many others have been
destroyed in pure mischief.

At present we have only probability to go upon in
discriminating between the dwellings of the older and
of the later races established over the land.   Moreover,
great as is the material with which we have to deal,
it can only be a small part of the whole subject that
we can deduce from it.   Almost all organic substances
having decayed away to nothing, we cannot say any-
thing about the tents of textiles or of hides, or the

huts and houses of wood, which in this forest-clad country must have formed the great majority of the habitations. It is not to be supposed that it was necessarily the poorer houses that were built of such perishable materials. The exact contrary is the case. We possess in the literature, corroborated by lines of evidence into which this is not the place to enter, descriptions showing that, at least in the Iron and Early Christian Ages, the wealthier and more important houses were made of wood : and that by a curious anomaly, resulting from this, it is the poorer houses that have survived, and the richer houses that have disappeared.

II. In endeavouring to infer something about the dwellings and fortifications of the Stone and Bronze Ages, we may begin with the shore-dwellers. Their prototypes, the men of Oronsay, lived in wooden huts ; for in the recent exploration of the shell mounds, on that island, the holes for the posts of these structures were found.[1] The huts themselves had naturally vanished, and nothing could be told of their plans except what the positions of the post-holes revealed. When the shore-dwelling communities came to Ireland, they most probably settled in similar flimsy habitations. A few skins of slaughtered animals, hung on wooden props in such a way as to shut out sun, rain, or wind, was probably the most that they aspired to. Many of the shore-sites shew no trace of any fixed habitation ; there is nothing but the hearth—a layer of flat stones, covered with ashes, remains of a fire that may have been lit in the open air (fig. 91)—and the heaps of shells and other kitchen refuse. One of the most common indications of a shore settlement is a black line in the sand—the ancient surface, coloured by ashes and by the decay of organic substances.[2]

[1] See the report of the excavation of this mound, already referred to in Chapter III.

[2] The best example of this black line, remaining in the country, is at Portstewart : see PRIA, vol. xxv, C, p. 197 f.

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Hut-sites of stone have, however, been found at Whitepark Bay, Dún Fionnachaidh, Baile an Bhoin-eannaigh, and some other places where shore sites exist. They are all ruined to the foundations, and it would be hard to reconstruct their form with any certainty. We may, however, presume that they did not differ to any marked degree from the bee-hive kraals which have survived from a later time. Like these they were circular—as Prof. Montelius has shewn,

FIG. 91—HEARTH EMBEDDED IN THE SAND AT TEARMON FEICHIN. CO. LOUTH

primitive houses were always circular, thus keeping the tradition of the tent from which they were derived.[1] It is most likely that the shore huts differed from the bee-hive structures in having upright walls, making enclosures like large jam-pots, which could be roofed with boughs, laid across the top of the wall and supporting a covering of hides, cloths, sods of turf, or anything else that would keep out the weather.

[1] See Oscar Montelius, *Zur ältesten Geschichte des Wohnhauses in Europa*, published in *Archiv für Anthropologie*, vol. xxiii, p. 451.

III. On this theory the bee-hive kraal would be a later refinement. Most probably all the bee-hive huts that have survived to our time are of a date later than the period which at present concerns us ; but the construction on which they depend was already invented or introduced in the Bronze Age, for it is adopted in the large chambered tumuli. It is the principle of the false arch, so called, in which the stones of the wall are laid horizontally or nearly so, and project slightly

FIG. 92—EXTERIOR OF CLOCHAN NA CARRAIGE

over the stones of the course below.[1] The opposite sides of the chamber thus approximate to each other in their upper stages, until the space between them is narrow enough to be bridged with a stone of moderate size.

Of the extant bee-hive structures, one of the best preserved, and the best known, is Clochán na Carraige

[1] It is hardly necessary to observe that the *true* arch, in which the joints between the stones radiate from a common centre, is not known in Ireland till Christian architecture had made some advance.

on Ara Mór (figs. 92–93). It is of rather larger size than usual, and is built on an oval, not, as is more usual, a circular plan. The doorway is so small that it cannot be entered except on hands and knees, probably in order that the interior of the building may
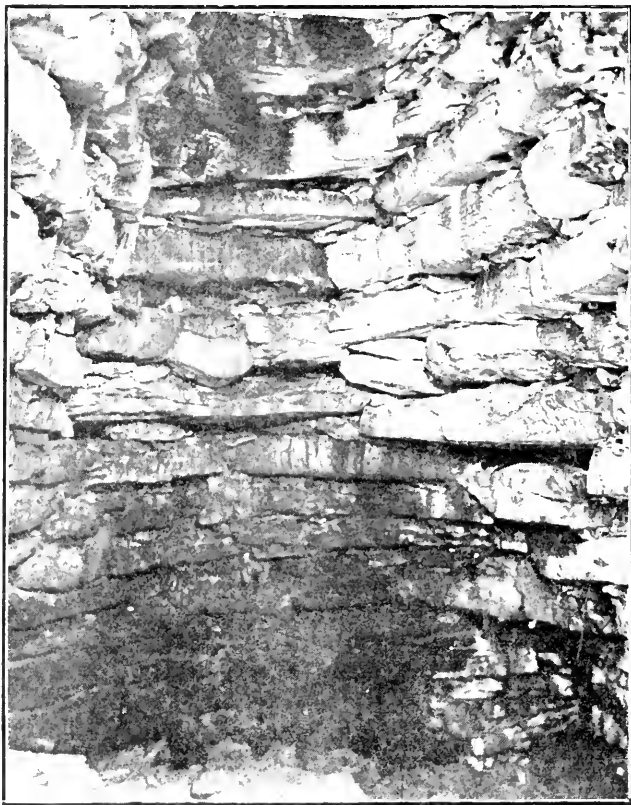
FIG. 93—INTERIOR OF CLOCHAN NA CARRAIGE

be the more easily defended against wolves and other intruders. A series of long stones covers the roof. This structure is typical of the bee-hive form of dwelling, but is doubtless later than the Bronze Age. I describe it here because there is no certain example of a bronze-age dwelling remaining in the country.

Huts such as these were the habitations of the poorer classes—the equivalent of the mud cabins of modern times. The wooden dwellings of the wealthy classes, of which we possess gorgeous descriptions in the literature, have all decayed to nothing. These bee-hive huts could be erected rapidly and cheaply, with stones picked up on the surface of the fields ; if covered on the outside with mud or sods they would be warm and dry ; they were at least as comfortable as many mud cottages. It was probably as a mark of humiliation that such huts became the normal habitations in the monasteries which from about the sixth to the eight centuries were established on the remote islands of the west, such as Sceilig Mhichil, Ard Oileán, and others.

There is no sign whatever of mortared construction of any kind in Ireland before the introduction of Christianity.

IV. Of bronze-age dwelling sites perhaps the most striking is the village recently discovered on a spur of the mountain called Ceathramhadh Caol, above Loch Arbhach, in Co. Sligo. A full description will be found in the *Proceedings* of the Royal Irish Academy.[1] The first thing to notice about this settlement is its situation at a considerable height on a hill-slope. This is the general rule with ancient settlements. A city is set on a hill because it can be most easily protected from enemies, human and animal, in such a situation. Down in the valleys, covered as they were for the greater part with forests, all manner of noxious beasts prowled, and enemies could attack the settlement from the advantageous position of a height above.

The settlement at Ceathramhadh Caol in its present state consists of forty-seven circular foundations of dry stone, in diameter ranging from 20 to 40 feet. The walls are double, consisting of two rings of slabs on edge with small stones filling in between, the walls thus being about 3 feet in thickness. The doorways

[1] Vol. xxix, section C, p. 331.

must have been raised above the surface of the ground
a little, and in every case the walls have been ruined
to below the thresholds.   There is no trace of any
internal division into rooms, nor (so far as their ruined
state permits us to judge) is there any sign of their
oversailing after the manner of bee-hive kraals.   In
fact it is improbable that they did so ; for to cover
a space of as much as 40 feet in diameter with a bee-
hive structure would require a much greater thickness
of wall to give stability.   Most likely the structures
were of the " jam-pot " type, and were rather protec-
ting enclosures, built around dwellings of a more
temporary nature—wooden huts or tents—and shield-
ing them from the wind which on their exposed
situation would otherwise have blown them away.

Thus in dealing with the dwellings of the Bronze
Age we are led to the conception of a hut of wood or
hides or textiles, enclosed within a dry-stone screen-
wall, circular on plan.   This protects the hut
from the wind—a necessity on a stormy moun-
tain slope, even if there were no wolves to consider.
The people inhabiting these huts were by no means
poverty-stricken ; they erected large and important
burial carns over their dead in the neighbourhood of
their dwellings.   We need not therefore infer from the
apparent poorness of their homes that their life was
correspondingly degraded.   Doubtless their standard
of comfort would not satisfy the meanest among
ourselves ; but, in dealing with the subject of social
organisation, each community and each age must be
considered on its own merits, without making invidious
comparisons with other times and other manners.

V. From enclosing each hut within its own boun-
dary-wall it is but a step to concentrating all the huts
together in a single organised community and sur-
rounding them with a common wall.

One of the most specious and weighty arguments
in favour of those who deny the claims of Ireland to
a native civilisation of any kind is the total absence
of any traces of a town community anterior to the

foundations of the Norman conquerors. In criticising this argument we must bear in mind two things. First, that we have not got remains of more than —what shall I say?—perhaps the fifty thousandth part of the prehistoric houses that were at one time or another in existence in the country ; so that it is really impossible to say how they may or may not have been originally grouped. Secondly, that the Celtic village is organised on a different system from the Teutonic village, as anyone may see from the railway carriage window in travelling from Cork to London by Holyhead. In the Irish part of the journey he will see but few villages. There will be a succession of single houses, each on its own holding ; the village will consist of a few houses, shops, the school-house and the clergy-house, grouped around the church. In the English part of the journey there will be seen a succession of villages, of considerable size, with very few scattered houses between. The same contrast is to be observed in the Celtic and Teutonic parts of Northern Europe.[1] Thus the absence of town communities would denote a different, but not necessarily an inferior, organisation. But even with the imperfect materials at our disposal, we can say that it is not altogether true that such organised communities did not exist. We have just described the remains of one such community of the Bronze Age. There is in the S.W. of the Barony of Corco Dhuibhne, in Co. Kerry, a large series of bee-hive huts, the abodes probably of a fisher community of the Iron and Early Christian Ages. There are altogether some 400 structures in this group, which forms what can at least be described as a village.[2] The extensive mounds of Teamhair indicate the former existence of a large and important community there ; and the enclosure south of the sacred ridge, called Ráith Mheidbhe—a ring-wall enclosing a space about 600 feet in diameter—is most

[1] Consult W. Z. Ripley's *The Races of Europe*, p. 239 ff., for particulars.
[2] The whole settlement is fully described in TRIA, xxxi, p. 209 ff.

likely the site of the village where the royal servitors dwelt.   The geographer Ptolemy mentions several Irish " towns " by name.   In short, I question the accuracy of the sweeping statement that communities such as we may call small " towns " had no existence in Pre-Norman Ireland, though doubtless there were none organised on the elaborate system of the Norman municipalities.

VI. In the great stone fortresses, such as Stéidhg in Co. Kerry, Grianán Ailich near the city of Doire, and the famous forts of Ara, we may see the enclosing walls of fortified villages of considerable size.   But the question must first be considered, to what period we are to assign these imposing structures.

For the present the answer must be unsatisfactory. We do not know.   It is impossible to be certain whether these are bronze-age or iron-age fortresses. But on the whole they are probably to be assigned to the more remote period, and that for the following reasons :—

1. Mr. Westropp has reported the discovery in Dún Aonghusa, the most important and best known of the forts on Ara Mór, of a flint arrow-head.   While it is possible that this was accidentally in the soil, and had no real connexion with the fort, the probability is the other way.

2. No history whatever attaches to these structures, and such traditions as exist assign them to the Pre-Celtic peoples.   While as transcripts of history these traditions are not of great value, this much is certain, that the popular voice agreed in making the forts Pre-Celtic.   Had they been built by the later people, there would surely have been some more definite story attached to them ; for written history began in the Iron Age, and the general course of events in that time is fairly well known.

I therefore describe some of these remarkable fortifications here, in the high probability, though we cannot express complete certainty, that they belong to the Bronze Age.

Grianán Ailich.—This structure stands on the top

of a small hill on the south shore of Loch Suiligh, just inside the Donegal side of the boundary between Cos. Donegal and Derry. It had fallen into ruin, but was restored—rather too completely—by Dr. Bernard of Doire, in the seventies of the last century. It consists of a circular enclosure, 77 feet 6 inches in diameter, surrounded with a wall ranging in thickness from 11 ft. 6 ins. to 15 ft. There is a gallery in the thickness of the wall; and as is frequently the case, the wall is built up in stages on its inner face, approached from below by steps. There is the ruin of a structure of stone, containing three rooms, in the middle of the enclosure. Outside is a succession of three ramparts, one outside the other, forming a series of defences.[1]

Aileach figures in the legendary account of the coming to Ireland of the Milesians, the fair-haired Celtic-speaking peoples. Somewhat unfortunately for its credibility, the tale would have us believe that these people came from Spain, of all places; and that the cause of their coming was in this wise. Their king was Golamh, also called Míl (from whom the Milesians received their name). Golamh had an uncle, Ith by name, who lived in a town in Brigantia, in Northern Spain. Ith one day ascended a tower in Brigantia, and in the far distance saw a land over the sea. This land was Ireland; and if anyone should doubt the possibility of seeing Ireland from a tower in Spain, however high, he may be referred to the tenth-century map of the world in the British Museum library,[2] where he will find Brigantia duly marked in the north of a Spain that approaches nearer to Ireland than the two sides of the Straits of Gibraltar. Such a map must have been before the story-teller who cast the old legend into its present literary form.

[1] For a fuller description, with plans, see the *Ordnance Survey for the Parish of Templemore*, p. 217; see also Dr. Walter Bernard, *Exploration and Restoration of the Ruin of the Grianan of Aileach*, in PRIA, xv, p. 415.

[2] Class-mark Tiberius B. V. I have reproduced this map in my *Muiredach, Abbot of Monasterboice*.

Ith came down from his tower, and announced his intention of going to seek the land which he had so strangely discovered ; nor would he be turned from his resolve though his relatives endeavoured to dissuade him.   So he set out with his followers, and in due time reached Ireland, then under the domination of the Tuatha Dé Danann, and ruled by three kings, Mac Cuill, Mac Cecht, and Mac Gréine—three not improbably totemic names, meaning son of " hazel," " ploughshare," and " sun " respectively.   Ith was courteously received by the Tuatha Dé Danann, and, passing through the land, he came to the fortress before us.   It happened that the three kings were there engaged in a dispute as to the division of the goods of their predecessor in the kingdom.   The question was referred to Ith, who gave a judgment about the matter which pleased all parties.   But unfortunately for himself he allowed his enthusiasm to carry him a little too far ; for after giving his verdict he pronounced the following words of eulogy :   " Be just ; it is fitting for you to maintain good brotherhood and to be well-disposed each to the other.   For good is the land and the patrimony which ye inhabit.   Plenteous her harvest, her honey, her fish, her wheat, and her corn ; moderate her heat and her cold.   Within her are all things sufficient for your wants."   The Tuatha Dé Danann said one to the other, that if they allowed a person who thought so highly of Ireland to escape alive he would bring an invasion of foreigners upon them, with the intention of taking away their land.   So they pursued after him, and killed him.   His followers escaped and carried the grievous news to Spain ; their friends there fitted out a punitive expedition, and sailed for Ireland.   This was the cause of the Milesian invasion of Ireland, according to the Book of Invasions.

Another story, which has survived in the *Dind-shenchus* in a rather incoherent form, ascribes the building of Grianan Ailich to the time of The Dagda, the chief ruler of the Tuatha Dé Danann.   We need not discuss the historic basis, if there be any historic basis, of such stories as these.   It is enough for us

that the historians compiled their tales in the assurance
of a Pre-Milesian origin for this building ; whether
the tale was or was not historically true does not
greatly matter. For had there been any other record,
the question would have arisen at once—how could
such and such an event have taken place in the Grianán,
when we know that it was built so much later ? And
surely, if an iron-age monarch had erected this great
fortress, some memory of the fact would have been
preserved. Distracted as we are by books, news-
papers, and every possible interruption in our complex
society, we can scarcely realise the tenacity of tradition
among a people who have nothing else to think about.
Unaided folk-memory is very long. The kings of
Uganda can enumerate from memory the names of
their ancestors and collaterals for twenty-one genera-
tions ; how many of our readers can do the same ?
Other examples of the toughness of historical tradition
might be given, did space admit ; but all that we need
here say is that if the historians, writing about the
seventh century A.D., told of a structure a story which
implied that it antedatèd the coming of the iron-age
people—say about 400 B.C.—we may take it that they
had good reason for their belief.

With this accords the results of excavations that
were made on the site at the time of its restoration.
A few stone objects were found, but not a scrap of
metal. On the other hand, the site was occupied
down to the time of St. Patrick, for we read of his
blessing it ; and even after his time it was more than
once repaired.

Of *Stéidhg*, near Waterville, Co. Kerry, we need
say no more than that it is a structure similar to
Grianán Ailich in construction and in size. There
are no passages in the thickness of the walls. The en-
trance is remarkable for its strong double lintel ; and
the interior shews a complex arrangement of steps.[1]

[1] A description, good though antiquated in some respects, will
be found in TRIA, xiv, section 2, p. 17. There are good photo-
graphs in Lord Dunraven's *Notes on Irish Architecture*. Vol. i.

But it is on the islands of Ara that the most striking fortifications of this kind have been preserved.   I know nothing in any country more stimulating to the imagination than the problem which these extra-ordinary fortresses present to the archæologist. Huge structures stand on those barren islands, and we ransack tradition and history in vain for the smallest ray of light as to their origin. We find nothing but vague tales of Fir Bolg refugees—tales highly improbable, for the forts do not look like the sort of buildings that refugees would be able to construct.

All three of the inhabited islands of Ara have such buildings ;   but here I need refer only to four on Inis Mór, and one on Inis Meadhon.
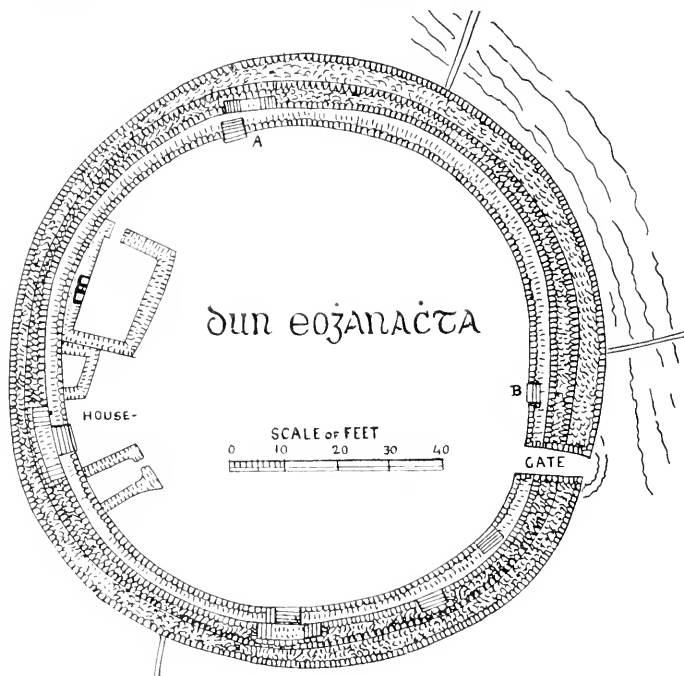
FIG. 94—PLAN OF DUN EOGHANACHTA

Dún Eoghanachta (fig. 94).—A simple ring-wall, 14 ft. thick, and enclosing a space 90 ft. in diameter. The wall is built in three stages, connected by roughly

constructed flights of steps. Some of the stones are of great size, one in the doorway being over 5 ft. long. Inside the enclosure, opposite the entrance, there are the foundations of three stone huts ; these are the only constructions remaining inside the fort itself. There is a spring of water just under the crag on which the fort is built.

Dubh-Chathair is a weird construction on an imposing cliff headland, over a hundred feet high. It is impossible by a mere description to convey an idea of the impressive nature of the scene. The two inlets on each side of the promontory are the fallen-down mouths of caves, in which the sea is perpetually booming. Approaching the headland we meet with a *cheval de frise* of broken stones, similar to that which we shall find presently at Dún Aonghusa, but less complex and of smaller stones. The wall is badly built, of slabs of stone ; it is about 18 ft. high. It is not impossible that this is the last relic of a colossal circular structure, of which the greater part has been washed into the sea ; but more probably it is a promontory fort, such as I shall describe presently, and most likely it is later than the other forts on the island. There is a complex group of bee-hive kraals inside the wall. There was a doorway at the western end of the fort wall, which, however, fell into the sea in about 1830 ; at present the entrance to the fort is by a rather alarming narrow gap between the end of the wall as it exists, and the sheer cliff on which the fort is built.

Dún Eochla (fig. 95) is a truly magnificent structure. It stands about the middle of the island, and consists of two rings. The inner ring is oval, measuring 91 by 75 feet, and surrounded by a wall about 15 feet high and 12 feet thick. Like the walls of the other forts it is built up in stages approached by stairways. The entrance, which is formed of very large stones, is between 7 and 8 feet wide. It is noticeable that the entrances to all the forts of Inis Mór are so turned as to command the nearest landing-place. Inside the inner ring there is a shapeless circular construction, probably a ruined hut. The

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1909~

S
W E
N

6'6" HIGH
15' 4" HIGH
A
B
13 FT HIGH
12 FT HIGH
8'6" HIGH

DETAIL
OF STEPS & WALL
AT A.

SCALE FOR PLAN
0   50   100 FEET.

SCALE, FOR DETAIL
0   5   10 FEET.
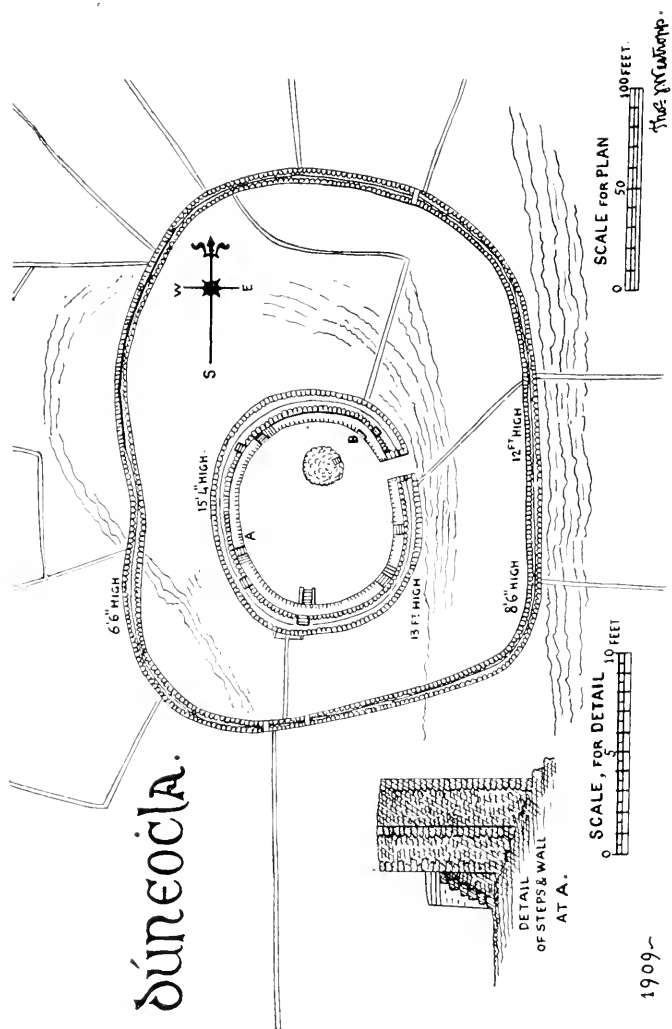
FIG. 95—PLAN OF DUN EOCHLA

outer ring is also, roughly speaking, oval, measuring about 270 ft. north to south, and about 190 ft. east to west, surrounded by a wall 8 or 9 feet high.

Again and again, as we stand on the wall of this great structure, we ask ourselves who were the people who raised it, and for what purpose ; against whom was it necessary to defend this barren and rocky islet with such gigantic works ? It is passing strange that though the people of the island have been, on the whole, isolated, living on their own memories, yet not a breath of tradition remains to tell of the builders of the fortress.

Dún Aonghusa (figs. 96–97)—This is the most famous of all the forts on Inis Mór. In approaching it we may permit ourselves to quote Mr. Westropp's eloquent words about it : " Of all the early forts of Ireland we may say that only one has appealed to the imagination, and even to the affection, of the nation, as a building, and become, with most antiquaries, the type and symbol of the countless similar structures, all subordinate to it in interest. At Emania and at Tara it is the sentiment and tradition, not the remains, that so appeal ; but at Dún Aongusa the site and the building affect even the coolest mind as no blaze of mythic and historic association could do. Many of us still remember the sense of almost inaccessible remoteness that attached to the ' Aras of the Sea.' All who have visited the spot feel the repellant attraction of the gigantic precipice and the swirling abyss over which the fort is so airily poised. Then there is the pathos—no less of the legend that made it the refuge of a doomed and hunted race, than of its own inevitable destruction—that invested the broken grey walls on the farthest edge of the old world."[1]

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[1] From a *Study of the Fort of Dun Aengusa in Inishmore, Aran Isles, Galway Bay ; its Plan, Growth, and Records :* in PRIA, xxvii, sect. C, p. 1. This is by far the best account of the fort. For the other forts on the island refer to Mr. Westropp's thorough *Study of the early Forts and Stone Huts in Inishmore, Aran Isles, Galway Bay :* same volume, p. 174.

Dún Aenzuzᴀ.

OUTER WALL

UPPER RIDGE.

767′

ABATTIS

593′

FRAGMENT

GATE

g

h

225′

SLOPING WAY

434′

586′

640′

MIDDLE WARD

CITADEL

OUTER WARD

THE SEA

140′

180′

e

f

e

The Macmurrough 1909.

100 0   100   200   300   400 FEET.
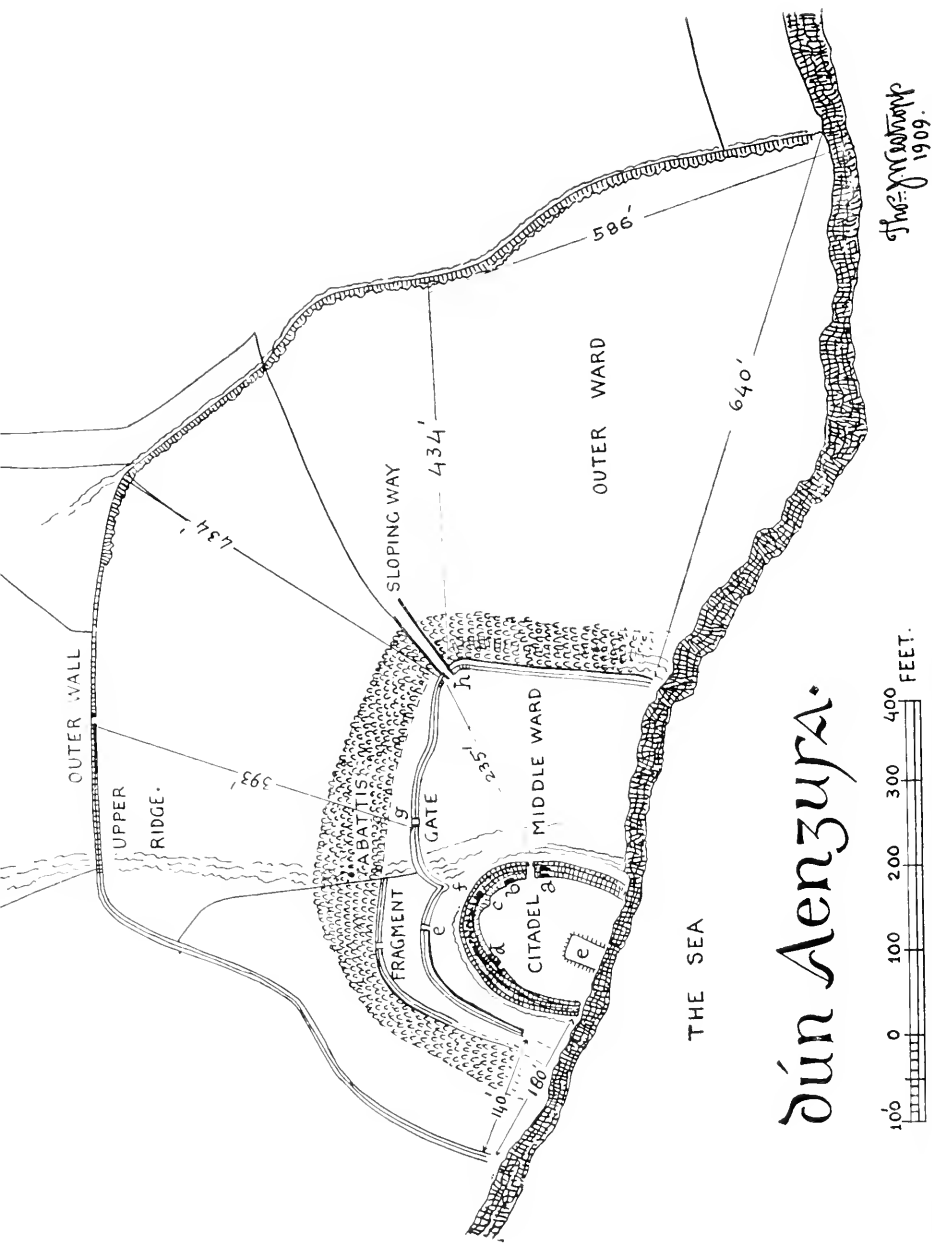
Fig. 96—Plan of Dún Aonghusa

The ancient legend about this fort is to the effect that the Fir Bolg, routed by the invading Tuatha Dé Danann at the first battle of Magh Tuireadh, fled and took up their abode in Ara, Islay, Rachra, and other islands of the sea. Later they returned, being driven from their refuges by the Picts ; and were given lands under tribute by the king of Teamhair. But owing to the heaviness of the rent imposed on them, they fled to the protection of Ailill and Meadhbh, the king and queen of Con-nachta, under the leadership of the sons of Umhor, their chief. Ailill and his consort received them, and settled them in various places ; Aonghus son of Umhor was settled in Dún Aonghusa in Ara. The other sons of Umhor likewise gave their names to the places thus granted to them ; they are enumer-ated by the ancient historian.[1] There was a story of the capture of Dún Aonghusa, entered in the catalogue of romantic tales in the Book of Leinster, but this story is one of the countless ancient Irish tales that have been lost.

We cannot, of course, accept the tale which we have thus briefly narrated as literal history. It is a tradition pieced together, to a large extent artificially constructed in order to account for the names of certain places in the mainland and on the islands of the west. The names were there, and no doubt the traditions of the Fir Bolg were there, and the early mediæval historians, like the famous writer on Chinese Meta-physics, " combined the information " ! It is as though a modern story-teller, finding in Ireland a place called Johnstown, and learning that a certain king of England called John came to Ireland, should assume that the town was called after the king, and should localise in the town some story current about the king, in order to account for the town's name.

I incline to the belief that in the Aonghus or Oenghus of the fort we are really to see the great hero-god of

[1] See Keating's History (I.T.S. edition), vol. I, p. 200.

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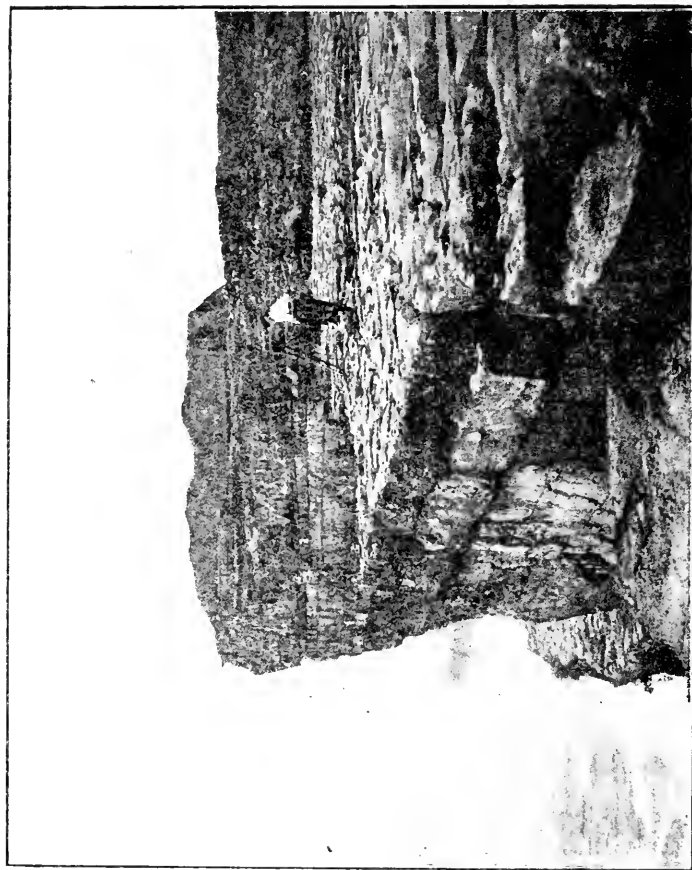
FIG. 97—VIEW OF DUN AONGHUSA

the Pre-Celtic people, of whom we shall have to speak in the next chapter. This Oenghus was equated by the incoming Celtic-speaking people to their Dago-devos (Dagda) or " good god." It is at least a coincidence that Grianán Ailich should be connected with the latter god, as we have already seen ; perhaps the Ara fort was put under the patronage of the earlier divinity when the tradition of the actual founder was being lost.

The fortress stands on the edge of a great cliff-wall, rising sheer from deep water to a height of about 300 feet. It is improbable that it should have been originally built as we see it now—a semicircle, more or less, with the unprotected edge of the precipice forming the straight side. There can be little doubt that the original fort was a complete circle, and that the erosion of the sea has reduced it to its recent form—and will in time sweep out of existence this wondrous monument of antiquity.

Approaching the fort we come first to the outer wall, which in its present form is over 2,000 feet long. It encloses a space 1,250 feet long measured along the cliff edge, and 650 in maximum breadth at right angles to the present line of the cliff. It is about 8 feet thick, and has but one gateway, which is nearly perfect.

Passing this wall we come to a notable feature of the fort, at a distance of 300 or 400 feet. This is the abattis, or *cheval de frise* : a band, 30 to 80 feet wide, of pillar stones set in wild confusion in such a way as to prevent the fort being taken with a rush. The stones are 3 to 5 feet in length. A similar feature is found in Dubh-Chathair, as we have seen, and in two other forts on the mainland ; also in one or two ancient forts in Scotland and on the Continent. Idlers, rolling stones over the cliff, have demolished the *cheval de frise* at its ends.

Just inside the *cheval de frise* is a fragment of another wall, 7 ft. 6 ins. thick and 250 ft. long. This wall Mr. Westropp justly thinks to be an old wall of the struc-

ture, superseded by a later wall. Another fragment remains at the eastern side. Evidently this wall was at some time breached, and the present serpentining middle wall erected to fill the gap. It is likely that the present outer wall was built at the same time, for, as Mr. Westropp notes, the *cheval de frise* would most likely have been the outermost feature in the original design, as it is at Dubh-Chathair.

The innermost citadel is surrounded with a rampart now 12 to 13 ft. high, but in places 18 ft. high in 1839. Like the other fort walls it is built in terraces, in this case only two in number, approached by flights of steps. The space enclosed is about 150 feet long. The buttresses which were added in the unfortunate restoration some years ago are without ancient authority.

Dún Chonchobhair.—This fort is also named after one of the sons of Umhor. It is the great treasure of Inis Meadhon ; an oval enclosure, measuring 221 ft. in length, and 115 ft. in breadth, surrounded with a wall 20 ft. in height, built in three stages. On the east side of the enclosure there is an outer annexe, with a gate-house guarding its entrance.[1]

" *Moghane* " (Muc-snámh ?) (fig. 98)—A fortress of different type, but comparable in size to these is that of " Moghane " in Co. Clare. This enclosure has evidently at some time been systematically overthrown, probably in some hostile raid. We have already referred to this fort in connexion with the great Clare gold-find which was found close by : and it is very likely that this was the loot from some assault on the fortified town, for " Moghane " fort can be nothing else.

There are three rings in the fort ; the outermost enclosed a space of 1,500 by 1,100 ft.—the length of its wall is 4,400 feet, somewhat larger than that of the railing surrounding St. Stephen's Green in Dublin—

[1] A plan and description of the fort will be found in JRSAI, xxv, 267.

the second 700 by 660, the third 380 by 360. There
is a ditch outside the outer wall, quarried in some
places in the solid rock. A few later huts have been
built here and there along the course of the wall, no
doubt out of its materials. The middle wall is about
17 feet thick, and the innermost no less than 20 to 22
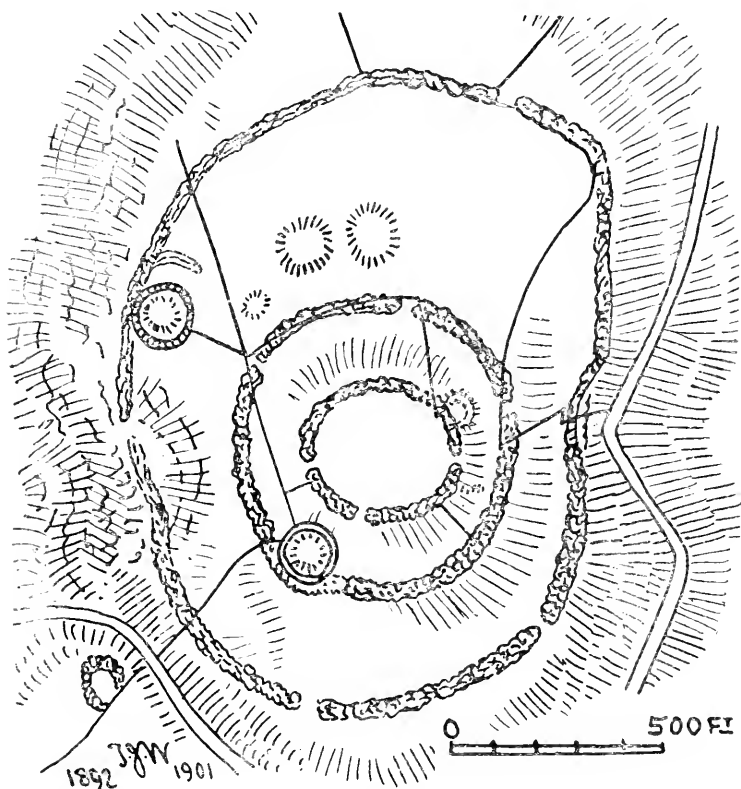
FIG. 98—PLAN OF MUC-SNAMH FORT

feet. Nothing has ever been found within the enclo-
sure to give any clue to its history, nor is there any
written record or oral tradition to give any account
of its origin.[1]

[1] A full account of this fort will be found in Mr. Westropp's
paper, *Types of the Ring-Forts and similar Structures remaining in
Eastern Clare*, in PRIA, vol. xxvii, section C, p. 218.

VII. It was said in the preceding chapter that one of the evidences for the matriarchate in the Bronze Age was the fact that a uniform tradition regarding the centres of Irish royalty assigned their foundation to women. Conversely, the existence of such a tradition about any site affords presumptive evidence that its foundations date to the Bronze Age. Little can, however, be said about the mounds which cover such a site as Teamhair ; there is nothing distinctively Bronze Age about them, so far as can be seen. Probably these palace sites were all re-modelled in the Iron Age.[1]

VIII. The Promontory forts (of which the most notable is perhaps Dún Beag in the Corco Dhuibhne village, above referred to) are probably for the greater part to be assigned to the Iron Age. All that need here be said, therefore, is that round the coast of Ireland, wherever a convenient headland presents itself, the promontory has been turned into a fortress by building a strong wall across its base. Often subsidiary buildings, kraals and the like, are to be seen on the space thus walled off.

IX. Some words must be said, in conclusion, about the ring-forts of earth, which are the commonest and most conspicuous of the remains of ancient Ireland. They are scattered in tens of thousands over the whole country ; and possibly because of their very frequency very little indeed is known about them. Archaeologists have been recording and describing the exceptional objects, and these common-place structures have been neglected : yet their very commonness gives them a special importance, as it shews that they are relics of the *normal* life of ancient days.

A large book could be written upon these structures, enumerating their types, varieties, and probable purposes. The simplest form is an unbroken ring of earth,

[1] As reference to the descriptive part of my monograph, *Temair Breg* (PRIA, xxxiv, C, 231), will shew, the traditions accord with this view of the case

enclosing a circular space that may be anything from about 15 feet in diameter up to an acre or so in extent. Next comes a similar ring, with a fosse running alongside it—most commonly outside, but occasionally inside. Thirdly we may mention a similar ring and fosse, but with an entrance-gap, corresponding to which there is a causeway through the fosse. Further types are formed by multiplying the number of mounds : some add a second, others a third vallum. Ring-forts with more than three mounds are seldom found ; some, however, have the appearance of this degree of elaboration, as one of the mounds— usually the second—is double, a sort of passage way with a parapet on both sides running along the top.

Further complications are produced by multiplying the number of rings—two or even three enclosures, close together or in contact, being not infrequent. It is, however, not always easy to determine, in such a case, whether we have to deal with several independent simple structures close together or with one compound structure (the " figure-of-8 " type).

When there are two or more concentric rings surrounding the structure it often happens that the entrance-gaps are not opposite one another, but that the visitor, having passed through the entrance in the outer vallum, has to walk along the intervening fosse, perhaps a quarter of the way round the fort, till he reaches the gap in the inner vallum. The purpose of this is evidently to compel him to turn his flank to the defenders of the fortress, and so to put him at a serious disadvantage.

The forts above described are circular rings : usually they are so exactly circular that they must have been laid out, by their builders, with the aid of some mechanical contrivance ; probably a rope was tied to a peg at the centre of the proposed fort, and swept round as a moving radius, thus tracing the circle. But the ring-forts are not all circular. Some are D-shaped, with one straight side : others are quadrilateral and more or less rectangular. It is

generally supposed that these latter forms are later than the circular structures, but without very much ground on which to base the speculation. That certain of these forts are bronze-age is indicated by the discovery of bronze spear-heads and ferules in one (type not stated) at Hollyfort, Co. Wexford.[1]

It may be that certain types are characteristic of certain areas. But until the archaeological survey of the country is undertaken and completed it will be impossible to determine whether this is so. If they are ever to be studied properly—if the survey just mentioned is ever to be carried out—the time is now or never. Old superstitions, which have preserved them intact till now, are dying : and while the authorities look on apathetically, a soulless land-greed is already beginning to deprive the country of these most interesting relics.

The walls are constructed, some of earth alone, some of earth mingled with stones : some combine earthen with stone walls. Some are great and imposing structures, even to-day when the weather has been playing on them for over a thousand years : others are insignificant.

Many of these structures have no sign of any internal sub-division, or of enclosed buildings. But in others we find the foundations of guard-chambers beside the entrances, bee-hive kraals, and also souterrains—underground chambers and passages, often of considerable complexity.

The purpose of these ring-forts is probably variable. Some are certainly not forts, but bronze-age burial places : in the concluding chapter of this volume we shall see one or two illustrations of this. Probably the majority are residential : but many of them are far from any water supply, and are so placed as to be easily attacked by enemies. Others are very likely simple cattle-pens. Most probably the walls were reinforced by a *cheval de frise* of brushwood on the top, to prevent the entrance of unwelcome visitors.

[1] JRSAI, xxi, 485.

The remark just made, that the ring-forts which seem to be residential are often placed in undesirable military positions, applies to many of the fortified structures in Ireland. Stéidhg, for example, is situated where no military engineer in his senses would place a fort. It is commanded by heights out of the reach of the defenders, but from which the attackers could shoot missiles into the enclosure. The explanation of this anomaly is very simple. It was not so much human enemies as wolves which were the attackers that had to be feared. These elaborate fortified steadings do not tell of a time when every man's hand was against his fellow, as some would have us believe. They tell of a time when on the contrary communities had to combine against this terrible destroyer of their flocks. This is the explanation of the construction of countless " forts " over the country which could not have resisted the siege of a dozen hostile men for a week.

The date probably varies as much as the plan and construction. Enough is not known to date individual examples. Some, however, must be quite late, as Ogham inscriptions have been stolen by the builders from the graves to which they properly belong, and used (often mutilated) as building material in the souterrains. Others may well be as old as the Bronze Age. No excavation in these structures has ever yielded any objects worth discovering—a few scraps of broken pottery or the like is the most that has been found in them.

We repeat, it would be quite hopeless to attempt, within our limits, anything like an exhaustive treatise on ring-forts. The subject is endless ; and it has hardly been touched at all by Irish antiquaries. Enough, however, will have been said to give the reader a starting-point ; which indeed is all that we can hope to do in any of the chapters of the present work.

CHAPTER IX

I. Suppose that we were desirous of learning the geological history of some complicated system of rocks ; and that it was possible to procure exact diagrams of their stratification, with a carefully selected series of specimens from each stratum, correctly labelled and arranged in their proper order. We might reasonably expect that a geologist would be able to give us the information we required, from the material which we were thus able to put at his disposal, even though he had no opportunity of personally visiting the site.

But now let us suppose that for some reason we wished to obtain a second opinion on the subject : and that in communicating with another geologist we employed a messenger so careless or so untrustworthy that he made the diagrams illegible by dropping them in mud, lost a number of the specimens, detached the labels from the rest, affixed false labels in some cases in their stead, and finally presented the specimens all mixed up and disarranged. It is common sense that Geologist No. II would be at a serious disadvantage as compared with Geologist No. I, and that it would be unreasonable to expect from him a report so full and so accurate as that presented by his more fortunate colleague.

The disadvantages under which Geologist No. II labours, in this hypothetical case, are no worse than

those from which we ourselves suffer when we endeavour to reconstruct something of the religious ideas of the men of the Stone and the Bronze Ages. The problem before us is analogous to that which our faithless messenger has put before him.

The study of Comparative Religion is one of the most elusive that can occupy the attention of a scholar. On no subject are peoples and tribes so reticent as on their religious beliefs and practices. In no subject is it possible to follow so many Wills-o'-the-Wisp. It is instructive, as a warning, to look back over the history of the interpretation of ancient religions and mythologies during the last thirty or forty years. One scheme after another has arisen and has fallen. Thus, there was a time when the solar system was the universal solvent. Everything was interpreted as a myth of the sun, the dawn, the night, the light, the darkness, the heavenly bodies. Was a hero born ?— he was the rising sun. Did a hero die ?—he was the setting sun. Did he rise from the dead ?—even this was no difficulty for the solar mythologist : is not the sun called back to life anew every morning ? Did a story tell of a man with one eye ?—he was obviously the sun. Did it, on the contrary, tell of an Argus with a hundred eyes ?—what could he be but the sky, twinkling with its myriad stars ! Did a heroine like Persephone spend half her time in the gloomy underworld, and half in the joyous world above ?—obviously she was the dawn, which comes half way between the darkness and the light. The great charm about the solar myth hypothesis was that it was always right, and never failed of an explanation. If there was a myth that could not, however tightly one turned the thumbscrew, be forced to recall one set of celestial phenomena, there was quite a large selection of alternatives, one or other of which would be sure to fill the gap. The rainbow, the aurora borealis, or the zodiacal light could be called in on an emergency.

This form of criticism is associated, in these islands, with the name of its Oxford protagonist, Max Müller.

It was applied to the traditions and mythology of Ireland by the late Sir John Rhys, in his Hibbert Lectures on *Celtic Heathendom*. That book was a remarkable pioneer study in a field till then all but untilled. But it carried the theory much too far. Even a clear-cut historical character like Cormac mac Airt was forced to become a sun-god : and this theory still lingers among the uninstructed, who probably know little or nothing about the many enduring contributions made by Sir John Rhys to Celtic scholarship. Practically all such exegesis as this is now obsolete, for the heavy guns of Mr. Andrew Lang and others shattered the solar hypothesis : and the corn-spirit reigned in its stead. Like the sun-myth, this also was pushed to extremes, and regarded as a general explanation in all difficulties. Like the sun-myth, the corn-spirit is now finding its level : and probably in days to come, someone will hit upon a new scheme of interpretation which, like its predecessors, will run its course.

This is not to say that there is not a very considerable element of truth, both in the solar myth hypothesis and in the theory of the corn-spirit. But they must not be forced to work overtime !

There is a third method of interpretation, which has its place within certain limits : namely, to treat ancient mythic tales as traditions (distorted no doubt) of actual events. Such a simple explanation appears in many cases eminently reasonable. But naturally it will not serve when we get the same story told in widely different parts of the world. The tale of the barber of the Irish king Labraid who had horse ears, which follows step by step the story of the barber of the similarly afflicted king Midas, even apart from the physical impossibilities in the narrative, could not be so explained, simply because it is found in two such widely separated places as Ireland and Phrygia.

II. The mere fact that there are so many different explanations of myths and of the associated rites is sufficient to show the difficulties with which we have

to contend in our present study. If there were any branch of the subject of Comparative Religion that we might have supposed to be familiar, it would surely be the religions of ancient Greece and Rome. We have countless literary works of all kinds, inscriptions, temples, tombs, to tell us of them ; yet in this branch of research there are dozens of unsolved problems. Consider on the contrary the meagreness of the material at our disposal in attempting to discover something of the religious beliefs and practices of the pagan peoples of north-western Europe. We have a few scanty details in Caesar and other classical writers. We have on the Continent and in Great Britain, but not in Ireland, a number of short votive inscriptions mentioning certain gods and goddesses, but telling us nothing about them. We have on the Continent some sculptured representations of certain gods, which are valuable so far as they go, but unsatisfying. We turn to the surviving fragments of the native literature, and find that they have been so ruthlessly edited by their early redactors that we have to work hard with a drag-net to recover any traces of ancient paganism at all from them ; and when found they have to be criticised with the greatest judgment. There are no temples at our disposal ; though there are a number of rude stone monuments, which, enigmatical as they are, have some contribution to make to the subject. And that is all. When we have collected these scanty materials together, there remains the further problem of deciding how much is Celtic and how much Pre-Celtic. We have in fact the same difficulty to meet as we had in deciding the date of the ancient fortresses described in the last chapter. In any case it is only to be expected that if the materials for the study of Celtic religion are slender, those from which we can get any idea of Pre-Celtic religion must be yet more exiguous.

III. In studying ancient religions we have to consider the subjects under various heads—the objects of worship (gods, etc.) : the methods of worship

(religious rites and ceremonies) : the places of worship (temples, etc.) : the ministers of worship (priests, druids, etc.). We cannot here give more than a sketch of the vast subject before us, which would require a large volume for its adequate discussion.[1]   In making a selection of a few of the materials at our disposal, we begin with the *objects* of worship.

IV. Let us ask ourselves first what would be the most likely objects of worship of tribes on the level of civilisation of the Stone and Bronze Ages, at the time when we first make their acquaintance.   An important element in their religion would be the cult of the dead, who have entered a mysterious supernatural state in which they have much capability for good or for ill.   Andrew Lang, in *The Making of Religion*, has shewn that the mental state in which hallucinations, wraiths, and " revenants " appear, abnormal in civilised man, is less abnormal in a savage, whose life is much less regularly ordered—where, to take one simple and obvious instance, long fasts are often succeeded by a heavy gorge of food, both conditions naturally disturbing the mental balance.   When we add the ignorance of the savage as to the true scientific nature of phenomena, which even his civilised brother understands but imperfectly, it is easy to understand that a cult of the dead will enter, to a great extent, into his endeavours to propitiate the unknown and uncomprehended powers with which he is surrounded.

Next to this we may mention the cult of animals. Even to us an animal is a profound mystery.   We cannot make the most rudimentary guess at the nature of the mental processes in, or the appearance of the world to, the cat dozing on our hearthrug.   Yet more mysterious is the wild nature and its mighty forces that surround a savage.   The weird noises of animals, their strange habits, their mysterious appearances and disappearances, their superhuman powers in various directions—in physical strength, in swimming, in

[1] The writer may be permitted to mention that he has for some time had such a volume in preparation.

swiftness, in flight—all these invest the animal world with a sort of divinity which we find reflected in many religious systems.

Thirdly will come the great inanimate powers and forces of nature—the wind, the rain, the sun, the storm, the thunder, givers now of life and now of death. With them may be coupled the meteor, fallen from heaven, and the heavy massive axe which the man himself has fashioned, but whose deadly stroke enables him to kill his enemies and to slaughter the animals that he hunts for food. Under this heading we may also connect the deities of fertility and vegetation, whose work it is to bring the harvest to its full fruition in its due and appointed season, and, generally, to superintend the increase of crops, flocks, herds, and Man himself.

Examples of all these classes are to be found in Pre-Celtic tradition. Among the principal deities of ancient Ireland one of the first and most important is Oenghus of the Brugh. The Brugh is certainly the great group of monuments near Droichead Atha, of which Dubhadh, Cnoghbha, and New Grange are the most conspicuous but by no means the only monuments. The mere existence of these gigantic burial places proves the existence of great men of old in whose honour they were erected. And the writer can see no valid reason to doubt that the constant tradition which connects New Grange with a personage called Oenghus is founded on some ancient history, now otherwise forgotten. In his paper on Teamhair he has adduced reasons to believe that Oenghus was a real historical character, who lived, probably, some time towards the beginning of the Bronze Age : that he was the founder of the religious rites which centred in the kingship of Teamhair : that in his honour, and probably under his superintendence, the structure called New Grange was erected : that he was deified after his death : and that the incoming Celts equated him to a god of their own, called variously Géide or Dagda, who was most probably a storm-god. The

argument on which these conclusions are based is rather complicated and cannot well be condensed here : readers may be referred to the Academy's publication, where it will be found.[1]

Of the worship of Oenghus we have many traces. In the life of the seventh century saint, Colmán mac Luacháin,[2] we are told that a certain king and his jester—we should probably read " druid " (*drui*) for "jester" (*druth*)—were travelling together on horseback and they came to a place where their horses could not go, so that they were obliged to tether them and proceed on foot. The king put his horse under the protection of St. Colmán ; his companion, as a pagan, invoked Oenghus. In the sequel the king's horse was found safe and sound, while the jester's was stolen.

Again, readers of the tale of the *Pursuit of Diarmuid and Gráinne* will recall the striking close of the story. Diarmuid had gone to chase the great boar of Beinn Gulban, ignorant of the *geis* upon him never to chase the boar. This probably means, as we saw in a previous chapter, that Diarmuid belonged to a boar tribe, and should not have chased his totem animal. He was slain : and then we read " At that time and season it was shown to Oenghus of the Brugh that Diarmuid was lying dead in Beinn Gulban ; and he went there in the wind, and raised three terrible cries of grief over the body of Diarmuid. And he said to Gráinne's people [who had come to fetch the body] that he would not let them take Diarmuid's body, but that he would himself bear it with him to the Brugh : and since, he said, I cannot restore him to life, I will put a spirit into him so that he may talk to me every day." Diarmuid belonged, according to tradition, to the Ernai of Mumha, certainly a Pre-Celtic people. He belonged to the matriarchal kin of Duibhne, whose name is found in several Ogham inscriptions in the barony of Corco Dhuibhne. Oenghus protected his own tribesman, therefore, and

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[1] PRIA, vol. xxxiv, sect. C, no. 10.
[2] Edited by Kuno Meyer in the Todd Lecture Series of the RIA.

himself saw to the disposal of his body, not permitting Gráinne, a representative of the fair-haired Celtic usurpers, to have anything to do with it.

Besides the important group of stories that centre in Oenghus, we have other traces of the cult of the dead. The great assemblies, such as those of Tailltiu, Tlachtgha, Carman, Uisnech, and the rest, all took place in close association with ancient cemeteries. In the Fenian legend of the Chase of Sliabh na mBan Finn,[1] we are told that Find mac Umhaill sat to rest on a certain assembly-mound, and his followers grouped themselves around him. " Whose tomb is this mound ? " asked one of the group : evidently it was a matter of course that the recognised place of assembly should be a tomb.

These examples must suffice for the present : and we now turn to the second head, the worship of animals. This follows a definite line of development.

At first the animal itself is conceived of as being endowed with mystical powers—an idea intelligible enough, for reasons already mentioned. But after a while man begins to assert his domination over the beasts. He discovers that though in certain points some of them surpass him, yet they are on the whole inferior to himself. The crude conception of the sanctity of the species merges in the animal god— some specific cow, or boar, or whatever it may be, that has lived on the earth in past time. Such, for instance, in the great bull of the epic of *Táin Bó Cúalnge*. In time this animal deity becomes identified with an anthromorphic god. Thus the Bull of Cualgne was identified with the swineherd of Bodhbh, King of the Sidhe of Mumha. Even in classical Attica tales were told of how Zeus for purposes of his own took on occasion the form of various animals. Doubtless these stories were originally told of animal gods, afterwards identified with Zeus. Our own nursery tales of Puss in Boots, and Beauty and the

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[1] Published in Kuno Meyer's *Fiannuigecht* (Todd Lecture Series).

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Beast, in which a prince appears in animal form, are worn-down extracts from mythologies of the same kind.

The Bull of Cuailnge : the Boar of Beinn Gulban : the Black Pig that is said to have scooped out the dyke which still remains to mark the southern limits of Ulaidh, and which has not yet entered the limbo of dead gods, as a recent ebullition of popular excitement has shown : all these are certainly extremely ancient animal gods. Probably " Irusan mac Arusain," king of the cats, of whom there is a grotesque description in the rollicking satire on the bards called *Imtheacht na Tromdhaimhe*, is a parody of some cat divinity. We have some evidence for cat worship in that singularly interesting biographical dictionary, as we may call it, known as *Cóir Anmann*. This compilation tells us that Cairbre Cat-head, who led the revolt of the serfs, that is, the enslaved aborigines, in A.D. 9 (according to the chronology of the Four Masters) was so called " because his god had the shape of a cat." Clearly that is no reason for such a name, and it could not have been invented as a reason. It must have been in existence as a separate story about Cairbre, and have been adapted by the writer of the treatise. It does not necessarily prove that the aboriginal inhabitants worshipped cats, but it does suggest that their Celtic masters asserted that they did so.

Of the worship of the powers of nature, the agricultural and pastoral deities, we have the clearest evidence in the periodical assemblies, which were not impossibly of Pre-Celtic origin. They took place, as a rule, at or near cemeteries, and were thus bound up with a cult of the dead : but the fact of their incidence on the critical days of the year proves that they were also connected with the annual phenomena of seasonal change. The assembly of Uisnech celebrated Beltane, the first of May, the beginning of summer. The assembly of Tailltiu celebrated Lughnasadh, the first of August, the beginning of Autumn. The assembly of Tlachtgha and that of Teamhair celebrated

Samhain, the first of November, the beginning of winter—the season of the death of the corn-spirit. There is evidence (which will be found set forth at length in the author's paper on Teamhair, already referred to) that the re-birth of the corn-spirit was also celebrated at Teamhair, with a feast at or about 25th March.

The frequent traces found, in ancient legend and in modern custom, of well-worship and spring-worship, most probably have their roots in the Pre-Celtic period : though doubtless there are imported Celtic accretions which it would be difficult now to disentangle. And especially is it probable that river-worship was an essential element of Pre-Celtic religion, but not so distinctively (except as a matter of survival) of the religion of the succeeding Celtic-speaking people. This is indicated by certain remarkable facts in the nomenclature of rivers in Ireland. These are of three types : A, Commonplace descriptive names, such as *Abhann mhór, Abhann dubh*, and the like— " the great river," " the black river," etc. B, Names derived from the towns by which the river flows : " the Boyle River," " the Galway River," " the Gort River," etc. C, Names entirely inexplicable. Group C are the oldest, and are most probably relics of the Pre-Celtic speech ; very likely originally the names of the deities of the rivers. Groups A and B denote rivers originally nameless, or of which the name was too ill-omened to utter. Where we have groups of nameless rivers, called merely after the neighbouring towns (as seems to be the case in S.W. Galway), we probably have the seat of a tribe which did not pay special religious homage to the rivers.

Before leaving this part of the subject, another important deity must be mentioned—the reigning chieftain or king. There is complete evidence (for which, again, reference may be made to the author's paper on Teamhair) that the reigning monarch was looked upon as an incarnation of a corn-deity. His presence among his people secured for them the boon

of good crops : his unworthiness caused pestilences and famines. His life was in consequence hedged round with many *geasa*, to safeguard his divinity. He had to be the strongest and most vigilant man in the community : not only was a person suffering from a physical blemish incapable of reigning, but if anyone could kill the reigning monarch he *ipso facto* proved himself more worthy to be a god upon the earth and reigned in his stead. Similar rites are reported from Italy (the *Rex Nemorensis* of Aricia), Central Africa, and many other places. The facts upon which these deductions are founded are reported of the Celtic period, but there can be little doubt that the system is of Pre-Celtic origin.

V. We now turn to the rites with which these powers were worshipped and propitiated. These were in part magical : and here we touch upon a problem which has been much debated within recent years and which has been answered in different ways : namely, whether magic or religion[1] had the priority in development. There are some who would give the priority entirely to magic. There is a drought, let us say, and the savage wants rain to fall, to water the earth. He therefore performs some rite, such as pouring water upon the ground—which is supposed in some way to produce sympathetically the effect required. It is of the same order of ideas as the well-known method of injuring an enemy by maltreating an image of the person in various ways. In time (on this theory) a rite of the kind becomes periodic : the original purpose for which it is performed is forgotten, and a tale is told to account for it. Gods emerge from the *dramatis personæ* of the tale. The other theory is that the action of the savages is really an acted prayer. " Give us rain," he says, in effect, as he pours the water on the ground : " this is what we want." It is an object-

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[1] It is hardly necessary to say that in speaking of " religion " here, we refer only to natural religion, as opposed to the religion taught by an inspired Teacher.

lesson, so to speak, for the supernatural Powers. For various reasons, which it would take too long to set forth in this place, the second seems to me the more satisfactory theory of the two.

We can give a selection only from the material that a careful search through the literature provides us with, for determining the rites by which these deities were worshipped. I begin with some observations on the well-known story of St. Patrick and Cromm Cruaich. This appears at first sight to be a story of Celtic religious worship, and therefore outside our present subject. But it is quite clear that the Celtic incomers took over much from the religion of their Pre-Celtic predecessors. It was natural that they should do so ; for the aborigines presumably would know how the gods of the land should be worshipped : we have already, in a previous chapter, spoken of the awe with which people would in pagan times enter a strange country before they discovered how its spiritual inhabitants should be propitiated.

St. Patrick, we are told, came in his peregrinations to Magh Sleacht, a place of uncertain identification, but said to be in Co. Cavan. There was there " the king idol of Ireland," called Cromm Cruaich : and he was of gold, surrounded by twelve subordinate deities of stone.

Obviously this is the description of a monument of the class known as Stone Circles. And in the Stone Circles I see, primarily, the representations or abodes of groups of bronze-age divinities. These monuments, of which a large number still remain in Ireland, are almost always planned on the model of the circle of Cromm Cruaich as thus described—a circle of stones with one outstanding stone outside ; rarely inside. The outstanding stone is often of commanding size, as in the circle figured (fig. 99) from Muisire Beag, Co. Cork. Another good example is the circle at Hollywood, Co. Wicklow (fig. 100)—a short distance south of Poll a' Phúca waterfall. It consists of a circle of blocks of granite, with a single pillar

standing outside, which someone has tried to conse-
crate by cutting a large cross upon it.   The circle
stands in a field called Achadh Gréine, " sun-field " ;
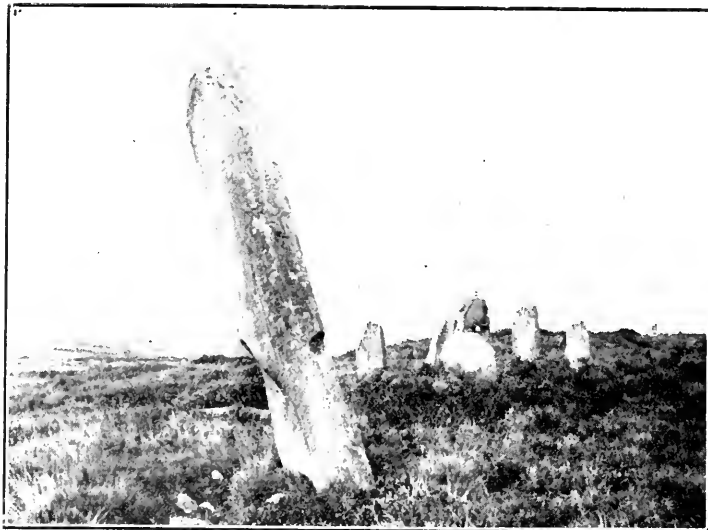
FIG. 99—STONE CIRCLE, MUISIRE BEAG

and it bears the name " The Piper's Stones," because,
it is said, these stones were once men, who in punish-
ment for having taken part in some profane dance were

FIG. 100—THE HOLLYWOOD CIRCLE

turned into stone—the stone outside the ring is iden-
tified with the piper.　To all these points we shall
return presently.

In the *Dindsheanchus* of Magh Sleacht we have an
ancient Irish poem, about 1,000 years old, which
describes Cromm Cruaich, and also describes the rites
that took place around it.　As it is of some importance
we may give here a rough version of it, in some approxi-
mation to the metre of the original :[1]

> Here used to soar
> A lofty idol, without peace :
> Cromm Cruaich was the name it bore,
> It caused all quietness to cease.

> Alas the tale !
> They prayed to it, with tribute sad,
> They, the brave people of the Gaedhil—
> To make them, in this hard world, glad.

> Their god was he—
> That Cromm all misty, withered, wan—
> Those whom he ruled so fearfully
> Are dead—and whither have they gone ?

> To him—oh shame !
> Their children, piteous babes, they slew,
> Their blood they poured out in his name,
> With wailing cries, and tears, and rue.

> For milk, for corn,
> For increase of their crops, in fear,
> They offered him, those parents lorn,
> One-third of all their children dear.

> The noble Gaedhil
> In prostrate awe before him came :
> With murderous rites—so runs the tale—
> From which Magh Sleacht received its name.

> From Teamhair came,
> One Samhain day, with royal show
> A prince—King Tighearnmhas was his name—
> His coming was a cause of woe !

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[1] The Irish text with a literal translation will be found in Meyer
and Nutt, *The Voyage of Bran*, vol. ii, p. 301, ff.

> There they transgressed,
> They beat their hands, their bodies rent,
> To serve the demon they addressed
> As god ; and showers of tears they spent.
>
> That mighty host
> Those strong unhappy warriors, died
> Around their king : their lives they lost
> In worship luckless, without pride.
>
> For, it is said
> No one escaped, save just one-fourth,
> The rest they left all lying dead
> Round Tighearnmhas, ravager of the north.
>
> Thus, to that god
> The hosts prostrated in their shame,
> And yet around the blood-stained sod
> The plain still keeps its ancient name.
>
> Stone idols old
> Ranked round Cromm Cruaich, four times three,
> They were of stone, but he of gold,
> The hosts deceiving bitterly.
>
> From Eremon
> The gracious founder of our race,
> Till Patrick came, they served a stone,
> And worshipped it within that place.
>
> With heavy maul
> He smashed the paltry gods each one,
> With valorous blows destroyed them all,
> Nor left a fragment 'neath the sun.

This important poem tells us (1) that there was in the place named an idol called Cromm Cruaich ; (2) that it had twelve subordinate gods around it ; (3) that it was worshipped with rites which involved prostrations, self-mutilations, and human sacrifices, especially the sacrifice of children ; (4) that at least one king, Tighearnmhas, had been sacrificed there ; (5) that the purpose of the rites was to secure goodness of crops ; (6) that St. Patrick destroyed the whole group with a maul or sledge-hammer. The stories about St. Patrick vary slightly in the details of the destruction

of the monument, but that is beside the present point. For our immediate purpose the first five of the above statements are those which are relevant. That Cromm was of gold probably means that his stone figure was specially adorned with gilding. There are other cases of the outside stone of a circle-group being conspicuously decorated : a good example is the well-known group called Long Meg and her Daughters, near Penrith in Cumberland. That no *gilded* example remains is not surprising. Much weight must be attached to such traditions as those enshrined in this ancient poem. The young people who are now growing up, in an Ireland that has been revolutionised by the newspaper, the schoolmaster, and the returned American, can have but little conception of the Ireland which I remember as a boy, when the fairies were as real as the cattle in the fields : and even the Ireland of my recollections had already lost traditions that were still living in the generation before. In fact, none of us can have any real idea of the wealth of ancient tradition that must have been in the country, and that must have perished, neglected and unrecorded, in the black years of the Famine, and of the subsequent clearances. And when we go back a thousand years or so, to a country divided into a large number of small communities, undisturbed by English interference, and living on their memories, it is not difficult to believe that much of the then only recently extinguished paganism must still have been very clearly remembered. People have wasted gallons of ink and reams of paper trying to wriggle out of the evidence which this poem affords of the practice of human sacrifice in Ireland. Such spurious patriotism is merely silly. There is not a country in the world where human sacrifices have not been offered at some time. If our ancestors two thousand years ago indulged in the practice, we may regret it : but as we cannot undo the past, let us do the next best thing, and feel grateful to them for giving us such an interesting subject for scientific investigation : for if the men of remote ages are not

materials for scientific dissection, so to speak, of what use are they at all ?

So we may be quite certain that sacrifices, both animal and human, formed a part of the ancient religious rites in this as in other countries. And another part of the rites was certainly dancing : and here we see the meaning of the tradition above referred to, that the stones in a circle had once been dancers, who were turned into stone for dancing a profane, that is, a pagan dance. A recollection of the use of these monuments is certainly enshrined in this legend.

It is by no means an isolated case at Hollywood. The mediaeval story-teller, Geoffrey of Monmouth, calls Stonehenge *Chorea Gigantum*, the " giant's dance." A like name (Dawns-maen, " the dance-stone ") was used in Cornwall to denote similar monuments : and the tale of the dancers of Hollywood is told in connexion with other stone circles as well. A dance in the field of the sun ; nothing can be more obviously a recollection of the religious rites which these hoary stones used to witness on occasion long ago. The rite is by no means confined to Ireland : indeed in this as in other things Ireland simply shares in one universal European cult, that can be traced across the Continent right over to the Labyrinth of Crete. That structure, the palace-temple of the solar bull (the Minotaur) is bound by close and subtle ties of relationship with the stone circles that dot our fields.

The dance was most probably a circling procession advancing in a sun-wise direction, *i.e.*, walking, running, or leaping in a circular path, keeping the right hand towards the centre of the circle. There was at Teamhair a stone circle—it has now disappeared—called the *Deisiol ;* and the Dindsheanchus of Teamhair speaks of it as " a sward with luck before going to death, where men used to turn right-hand-wise " : which probably means that some sort of circling procession was made there in order to induce the Powers to give success in battle.

Primarily the purpose of such circling processions was magical : it was intended to keep the sun in his appointed course. But doubtless the rite took to itself other ideas and other accretions as time went on— the usual fate of ancient rites, which is what makes Comparative Religion such an extremely complex subject of study. On Inis Mhuiredhaigh, an island that beyond all possibility of question was an ancient pagan sanctuary before it became the site of a Christian monastery, there is an altar called *Clocha breaca*, " the speckled stones." If you have an enemy whom you desire to injure, you go to this altar, and taking up one of the stones you walk round it left-hand-wise —a direction *contrary* to the lucky sun-wise direction : pronouncing the while the curse which you desire should fall upon your foe. Then, if the powers of evil, whatever they may be, who control these matters, consider that your curse is justified, it will fall on the enemy : if not, it will return on yourself—a salutary provision against the misuse of this powerful engine of destruction.

There is also some reason to believe that the dancers had a very remarkable accompaniment—the noise of the bull-roarer. The bull-roarer is an instrument of the greatest possible interest. It consists simply of a small lath of wood, tied at the end of a string. When the string is whirled round, the lath produces a peculiar fluttering sound, not quite like anything else : if the reader who has not heard it can imagine a rather noisy ventilating-fan which, however, is not steady in the sound it produces, but wavering, now loud, now soft, he will have a vague idea of what a bull-roarer sounds like.

The bull-roarer is an important instrument in the rites of the Australian aborigines. It is used to summon the tribesmen, and to scare off those not initiated into the tribal mysteries—especially the women : for it is believed that if a woman so much as sees a bull-roarer she will die. It is also used in primitive rites in America. It has been found

surviving in some ancient Greek rites : and in the
ancient Irish corroborees—the *feisanna* and *aonaighe*—
the use of the bull-roarer has quite recently been
identified.   There is good reason to believe that the
mysterious scream of the Stone of Fál, the inaugura-
tion stone of the Kings of Teamhair, was produced
by means of this wide-spread instrument.   In ancient
Ireland, as among the modern Australian black-
fellows, the voice of the bull-roarer (called in Irish
Roth Ramhach or " paddle-wheel ") was the voice of
a god.[1]

To return for a moment to the story of St. Patrick
and Cromm Cruaich, we should notice that outside
this story and a few other traditions which depend
upon it, there is no evidence for the existence of an
ancient god Cromm or Crom.   The name is probably
a nickname, given to the god in the early days of the
struggle between Paganism and Christianity, by the
adherents of the rival faith.   We should also notice
that the stone circle described in this narrative is less
a dancing place than a representation of the dance
itself.   The chief god (whatever his real name may
have been) stands in the middle, or in front, of the
group : the " sub-gods " are circling round him in
an eternal procession.   The stones are gods, or rather
the representatives or receptacles of godhead.   A
remarkable group of stone circles surrounds the
probably sacred lake, Loch Gair in Co. Limerick.[2]

Still commoner than stone circles are single standing
stones, some of them of small size but others as much
as 17 to 20 feet in height (even taller standing stones
exist in other countries).   These probably served a
variety of purposes, and belong to very different
chronological periods.   Some may be landmarks,

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[1] The whole subject is fully discussed in the author's paper on
Teamhair, referred to above.

[2] See Sir Bertram Windle's paper on this site, PRIA, xxx,
sect. C, p. 283.   Though I would not personally subscribe to the
astronomical theories put forward in this paper, I have carefully
tested it, and found that as a survey it is perfectly accurate.

or possibly memorials of noteworthy events. Others certainly are grave-marks : but references in the Brehon Law tracts[1] to *Ailche Adhartha*, " stones of adoration," evidently referring to monuments of this kind, shews that when these documents were compiled

FIG. 101—STANDING STONE

there was still a tradition that they had received worship—were, in fact, a kind of rude idol.

Even when the standing stones marked graves, they are to be taken as religious rather than merely

[1] Vol. iv, p. 142 ; v, p. 472.

memorial in essence. They are far more than mere gravestones : they are the receptacle provided for the life of the dead man, the medium through which offerings and honours are paid to his spirit. They are thus tangible memorials of the cult of the dead of which we have just spoken.

The majority of these standing stones are simply rude blocks set on end, shewing no mark or sign of having been dressed by a mason. The illustration (fig. 101) represents a good typical example, not exceptionally tall, at Greencastle, Co. Tyrone. Often such stones are found to have crosses cut upon them.

FIG. 102—" STATUE-MENHIR " AT CLOCHAR
(From a photograph by Mr. M. C. Burkitt)

These are to be explained as the work of Christians, who still preserved enough of the Paganism from which they had been rescued to have a superstitious dread of destroying these monuments, but anxious to take the harm of its paganism out of it.

A few stones, however, appear to have been so treated as to suggest the human figure that they were designed to represent. We have already (ante p. 230) figured such a stone, at Cuan an Bhainbh. At Fanachaidh, west of Castletown in Co. Cork, there is a

standing stone (one of a row of three, one of which has fallen) which certainly seems to have been trimmed into the rude semblance of a human figure. Naturally such stones—statues-menhirs, to adopt a convenient French term—would be most likely to be destroyed on a change of religion, and therefore it is not surprising that very few monuments of the kind are now to be seen in the country. But the tradition of the statue-menhir type of monument lived on till the introduction of Christianity, as is shewn by a most remarkable monument in the cathedral churchyard of Clochar. This is doubtless a
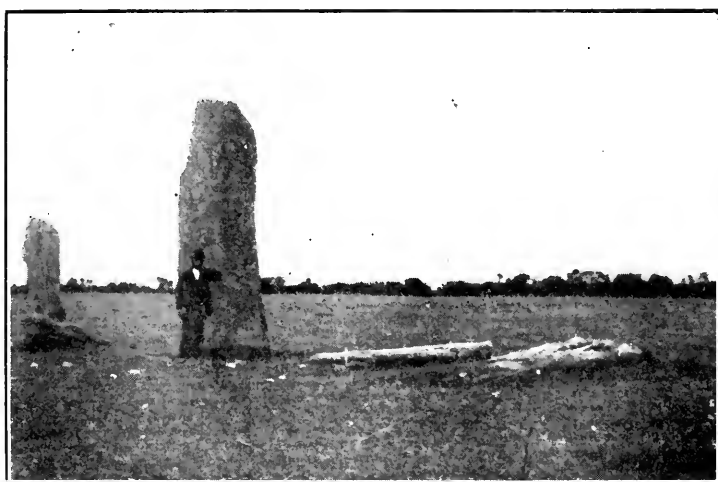
FIG. 103—ALIGNMENT

Christian memorial, but it is clear that it has been cut into a shape suggestive of the human figure.

There is another kind of megalithic monument which has to do, most probably, with bronze-age religion. This is the alignment (fig. 103). It consists of a row of stones set out in a straight line. There may be a single row, or a group of parallel rows. The stones need not be of large size, though some alignments are very imposing on account of the loftiness of the pillars of which they are formed.

There is nothing in Ireland comparable with the great series of alignments at Carnac in Brittany, where over a thousand pillar-stones are used : but some are of quite respectable dimensions.   Wakeman describes a group of four parallel alignments in Co. Fermanagh (at Cabhan Ceathramhadha), consisting of stones about 3 ft. in height and extending over a length of 480 feet.[1] The example here figured (at Barr an Chorráin, Co. Cork) though three out of the five stones have fallen, is impressive, owing to the great size of the stones (fig. 103).

In considering megalithic monuments of any kind, it must never be forgotten that what we see may be nothing but the skeleton of the original structure. There may have been mud, wicker-work, or wooden additions which were an essential element in their ritual use.   These we have no data whatever to restore : yet it often appears as though there must have been such additions.   At Kilmartin near Lochgilphead, Argyllshire—once more we remind the reader that Ireland and S.W. Scotland form one archaeological province, and that we cannot think of the one apart from the other—there is a remarkable series of stones the arrangement of which may be represented diagramatically thus :—

     : A   . B   : C

B is a large flat upright flagstone covered with cups and circles.   There are a number of smaller stones at its foot, here omitted, which probably have a ritual use.   The length between A and C is about 230 feet, B being almost in the middle of the line.   The two groups of two stones become intelligible when we consider them as the gate-posts of the entrance to a sacred enclosure, which was marked out in this case

[1] JRSAI, xiv, 501.

with a wooden palisade, in the centre of which stood the evidently sacred stone B.[1]   Some reminiscence of just such a monument may linger in the name *Gates of Glory*, locally applied to a pair of standing stones close together in a field a little distance west of Daingean Uí Çuis, Co. Kerry.   Behind these, there is a large stone now prostrate, which, like the stone B in the diagram above, is covered with a cup-and-circle pattern.   We may without in the least transgressing the bounds of reason, regard these three stones as

FIG. 104—VIEW OF LEAC CON MIC RUIS

the sole relics of an elaborate temple enclosure of wood.   There are other standing stones in the neighbourhood which may or may not belong to the same system.[2]

But the most remarkable stone monument which the Pre-Celtic age has left us is undoubtedly the temple—for it can hardly be anything else—called *Leac Con mic Ruis*, picturesquely situated in the

[1] For further particulars about this monument see the *Proceedings* of the Society of Antiquaries of Scotland, vol. xvi, p. 110.

[2] For the " Gates of Glory " see JRSAI, xxviii, 161.

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Deerpark near the town of Sligo. Other megalithic monuments, of less importance, stand by : and there is good reason to fear that others, again, have gone to make the high wall surrounding the Deerpark. The monument consists of a central area, 50 ft. long and 25 ft. broad, marked out with stones about 4 ft. high. At one end is a trilithon (two stones supporting a third laid upon them lintel-wise), which forms a doorway leading into a subsidiary chamber about 20 ft. long. The lintel of this trilithon has fallen or
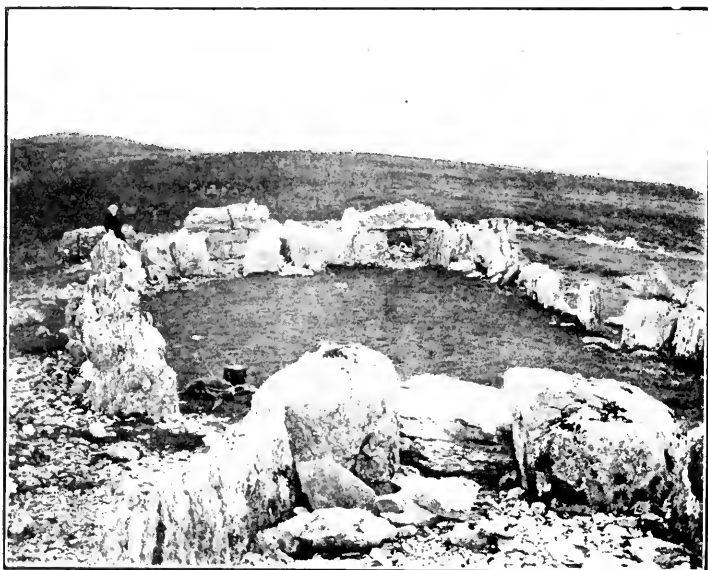
FIG. 104A—VIEW OF LEAC CON MIC RUIS

been pushed off its supports in recent years. At the opposite end are two trilithons leading into two similar chambers. The length of the whole chamber is close upon 100 ft., and it stands on a bank about 114 ft. long. It is possibly fanciful, but not unworthy of note, that the plan of the structure is not unlike a human body, the single chamber at the one end representing the head, the two chambers at the other the legs. Excavations have been made inside this

structure and have revealed human and animal bones, with some scraps of flint but no metals.[1]

Of the ministers of Pre-Celtic religion we can say nothing. It has been suggested that the whole druidic system is of Pre-Celtic origin : but while the possibility of this is not to be denied, there is no conclusive
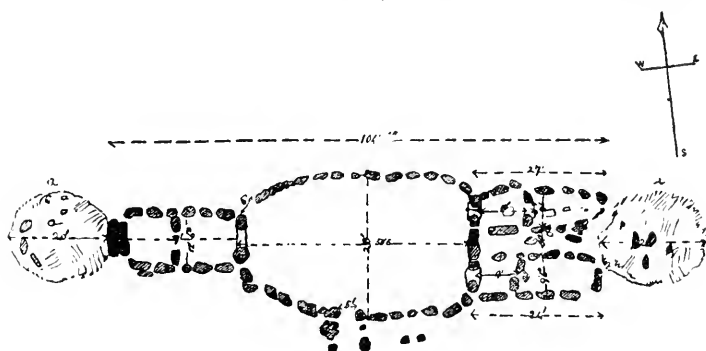
FIG. 105—PLAN OF LEAC CON MIC RUIS

evidence for it. The Druids are so closely bound up with Celtic religion that it is better to postpone anything we may have to say about them to our later studies in the archaeological history of Celtic Ireland.

[1] JRSAI, xxi, 578. There is a good account of this structure by E. T. Hardman in JRSAI, xv, 57, entitled *On a remarkable Megalithic Monument near Sligo*.

CHAPTER X

I. The subject of the disposal of the dead naturally
follows that of religion. Indeed, it is rather to be
considered as an intrinsic and very important part of
that section of our study. Much of the ancient religion
is founded on the cult of the dead : and the tendency
of modern scholarship is perhaps rather to increase
than to diminish the number of elements in religion
and in mythology attributable to this source.

II. At a very early stage in his development man
revolts against the inevitable decree of death. It takes
him altogether by surprise. He cannot believe in its
universality : there are even yet many tribes of nature-
folk which regard death as an abnormal accident,
caused by some maleficent power acting on the victim ;
were it not for witchcraft a man would live for ever.
And when a man dies it becomes the duty of the
witch-doctors to smell out the hostile magician who
has caused his death. With this revolt against the
law of nature, to which there is nothing analogous, so
far as we can know, in the animal world, there grows
up the conviction that death is not the end of all
things, but the door to another life. There is probably
no race or tribe, ancient or modern, not inspired with

this belief to a greater or less extent. It appears as early as the epoch of the mammoth, in the middle of the Early Stone Age—not improbably even earlier ; and it exists among the most primitive savages known to modern science.

III. We can tell something about the views of a future life held by a people, from the deposits which they leave in the graves of their dead. In his new life the hunter will need his weapons and his war-paint, the woman her domestic implements and her ornaments ; so these are placed beside their bodies in their last resting-place. There would be no sense or meaning in such deposits if no belief in a future life were entertained ; for the practically-minded savage is quite awake to the folly of recklessly wasting desirable goods. To serve a great chief, his wives and his slaves and his horses are slaughtered around his tomb, that their spirits may minister in the new life to his. Indeed, this *killing* of the deposit is not confined to animate gifts. For the line of demarcation between the animate and the inanimate is not so sharply drawn by the savage as it is by ourselves. The flying bird and the falling stone are both in motion, and therefore are both alive. The heavy axe kills enemies and animals with its deadly blows, therefore it is endowed with a mysterious vitality. It follows that as the living slaves and wives can be slaughtered in order to send their spirits after their lord, so the spirits of things that we call lifeless may be liberated for the same purpose. This is the explanation of the fact that such goods are so frequently smashed in pieces before being deposited in the tombs.

IV. Food is an important deposit in burials. The purpose which it serves may be variously explained. It may simply have been argued that the ghost needed sustenance, as the man whose body it had tenanted in life had needed it. But there is not improbably another and a more subtle reason for such deposits. There is a well-known incident in folk-tales—we find it in Ireland ; it is, indeed, universal—in which the

hero is brought to a mysterious place such as a fairy palace, and is forbidden by some one who befriends him to partake of the food set before him ; should he take the smallest particle he will never be able to escape. The notion underlying this incident is that latent in the old law of hospitality. When you break bread with another you are, as it were, one with him ; you make with him a binding covenant for mutual aid and protection. When you break bread with the fairies, or with the ghosts of the dead, or with super-natural companions, you are in like manner one with them. Readers of the Odyssey will recollect the same idea acting in the converse direction ; Odysseus, in his visit to the shades, cannot converse with them, or even make them aware of his presence, till he has given them a draught of earthly blood. And if you do not want your friend who has gone to join the dead to remain with them perpetually, you must supply him with earthly food. Peradventure he will taste of it and be recalled to earth again by it : if he be allowed to go hungry among the shades he may taste of their food, and so be obliged to stay in their gloomy land for ever.[1]

V. It must further be remembered that burial, and burial rites, are not only for the benefit of the dead. The living also profit by them. For the ghost of the dead man is a source of danger. It is important to keep it from wandering and annoying the living ; and some form of burial rite is necessary for this purpose. Even if the body cannot be procured, for any reason— as for instance because the deceased had been drowned, or devoured by beasts, or had perished among enemies—a semblance of burial must be given him. Cenotaphs—carns of stone, well built, but absolutely void of any contents—have been found in the ceme-teries of Ceathramhadh Caol, in Co. Sligo, and at

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[1] See Mr. E. S. Hartland's paper, *Fairy Births and Human Mid-wives* in " The Archaeological Review," vol. iv, esp. pp. 330–336. [Reprinted in his *Science of Fairy Tales*.]

Loch Craoibhe in Meath. Another good example of a cenotaph was the carefully built carn known as " the Miracles " (a mistranslation of *Fearta*, " graves ") at Tulach Craoibhe, some five miles from Inis Ceithlinn, This structure was well and carefully built, of large stones, but nothing was found within it except one boulder bearing bronze-age ornamental carving, used, however, merely as building material, its inscribed surface being turned downward. Such careless treatment of a bronze-age stone with symbolism, which probably had some sanctity at the time when it was made, may perhaps indicate that the monument belongs to the Iron Age.[1]

VI. The chief methods of the disposal of the dead, practised in Western Europe, are inhumation and incineration. There are others practised in other countries—mummification in various forms, exposure to carnivorous animals or birds, etc.—but these fall entirely outside our present study. There is, however, one other method, and, as some writers have attributed it to ancient Ireland, we may as well clear it out of the way at once.

VII. Strabo[2] tells us that among other customs which the Irish had, and which he evidently regarded as highly shocking, was that of eating their deceased fathers. Apologists have tried to console themselves by calling Strabo a liar, and certainly that eminent geographer was not wholly guiltless of regrettable mistakes : he admits candidly that his authority for the statement here quoted is doubtful. But as in the case of the irregular marriages to which we alluded in a previous chapter, this easy way of evading the difficulty is more discreditable to the apologists than to the ancient author whom they criticise. The practice to which Strabo refers certainly exists else-

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[1] T. Plunkett, *Account of the Exploration of a long barrow in the Co. Fermanagh*. PRIA, xv, 323. A similar stone, similarly treated, was found built into a ring-fort at Cluain Dubh, near Hilltown, Co. Down. UJA II, iv, 188.

[2] Bk. IV, chap. v, Section 5.

where, among tribes of which he could have had no knowledge ; and there is no reason in the world why it should not at some time or other have existed in Ireland.

National pride need not be seriously perturbed by making such an admission. For, rightly viewed, this custom, crude and repulsive to our sensibilities as it undoubtedly is, is yet not without its element of pathos and even of beauty. Consider what is at the basis of the general practice of cannibalism. It doubtless often has no end but the mere satisfaction of appetite ; but in many cases its meaning is much more subtle. A man sees that another has some desirable characteristic—bravery, skill in one direction or another, or what-not—which he himself lacks, but desires. By assimilating, in the most literal sense of the word, the fortunate possessor of the coveted quality, he hopes to acquire his talents. And so the son says of his dead father : " Let him pass into my personality ; let the being who till now I have been calling ' I ' be henceforth ' he ' ; let my life be his ; only let him live again." It is an endeavour to force from the mystery surrounding nature an answer to the question, asked at every grave-side since man began to realise that he is not as the beasts that perish—*If a man die, shall he live again ?*

That this custom lasted in Ireland down to the time when Strabo wrote is not probable ; but there is no evidence one way or the other. Even if it did persist so long, it is only another indication of the fact which Caesar proves clearly, that different grades of civilisation co-existed in different parts of these islands. That the aborigines of Ireland should have retained to a late date some of their primitive customs, customs that had come down from the Stone Age, is not at all impossible.

VIII. The normal method of disposing of the body during the Stone Age was by burial. As a rule, in accordance with a wide-spread custom, the body was placed lying on its side, in a crouching attitude—the

knees being drawn up so as to touch, or almost touch, the chin.

Only a very few stone-age sepulchres have been properly investigated in this country, and no very satisfactory reports of their examination have been published. In the neighbourhood of Baile an Bhoineannaigh, in Co. Kerry, was found a series of seventeen graves, apparently connected with a settlement that had left a deposit of implements and shells on the adjacent beach. Two or three only of these graves were properly examined. They were simply marked out and bordered with stones set on edge, enclosing a space averaging about 6 ft. by 2 ft. In this case the skeletons were not, as usual, crouched, but stretched at length. Nothing of the nature of coffins had been used. There was no sign of any violence on the skulls, which were of both males and females. No trace of implements, metal or flint, or pottery of any description was found in any of these graves. The gravegoods of the shore-dwellers, so far as the materials available permit us to judge, are of the scantiest description.[1] Indeed this is the rule in all periods of Irish history ; the grave furniture is seldom if ever intrinsically worth the trouble and expense of searching for it.

IX. The well-known mound of Cnoc Maraidhe, in Phœnix Park, levelled in May 1838, is a good typical example of a stone-age burial. The mound contained a chamber, consisting of five supporting stones about 2 ft. high and a covering table-stone 6 ft. 6 ins. long. This chamber contained the remains of three human beings ; the first two were perfectly preserved, but only the tops of the thigh bones of the third were preserved. It is probable that the latter were amulets, worn by the two people to whom the grave really belonged. The bodies were slightly crouched, and the heads pointed north—the latter, however, does not seem to be a point of great significance, as the

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[1] See Archdeacon Wynne's note, *Traces of Ancient Dwellings in the Sandhills of West Kerry*, JRSAI, xxiii, p. 78

orientation of such skeletons as have been observed
in Stone-age tombs in Ireland seems to be a matter
of complete indifference. These people had also worn
necklaces of *Nerita* shells, which had been rubbed
down on the valve to make a hole for threading. A
vegetable fibre was used as the thread, and the shells
were threaded ingeniously upon it. There was also
a small fibula of bone and a knife and arrow-head
of flint.

FIG 106 —OBJECTS FROM THE SEPULCHRAL CHAMBER AT
CNOC MARAIDHE

In addition to the central chamber there were four
small cists embedded in the mound, each containing
an urn in which were the ashes of burnt bodies.
These latter are doubtless what are technically known
as secondary interments—an adaptation of an earlier
burial mound as a convenient place for disposing of
a later burial. The urns, and the rite of burning,
are sufficient to date these intrusive interments to the
Bronze Age.

The skulls and grave-goods found in this mound
are to be seen in the Royal Irish Academy's collection
in the National Museum.[1]

[1] PRIA, i, 186 ff.

This example will show the nature of the graves of the middle period of the Stone Age in Ireland—the period intervening between the earliest shore-dwellers and the dolmen-builders, of whom we have still to speak. We may see the bodies stretched or crouched, deposited within a chamber made of slabs of stone, and covered with an earth mound, of moderate dimensions. In Great Britain the stone-age burial mound, at least in certain districts, is of an *oval* plan, contrasting with the *circular* plan of the bronze-age burial mound. This rule, though not invariable, is useful to enable us to form a fair anticipation of what to expect when we begin to excavate a tumulus. But the distinction of " Long Barrows " and " Round Barrows " fails us altogether in Ireland. There are no true Long Barrows in Ireland at all, though (perversely enough) there are a few carns of stone-heaps of the long " stone-age " shape, but undoubtedly belonging to the Bronze Age.

X. As the Stone Age drew to a close a new fashion began to spread ; the fashion of Dolmen-building.

A dolmen is a structure, often of considerable size, consisting of a number of stones standing upright and supporting one or more horizontal cover-slabs. The word is Breton, in which language it bears the appropriate meaning " table-stone." In Ireland they are often called by the name " cromlech " : and there seems to be an idea current that it is " patriotic " to use it, though it is a much less satisfactory term. In the first place it is ambiguous, for this word is used by the French archaeologists (who easily stand first among the masters of pre-historic research) to denote what we call stone circles—a totally different class of monuments. In the second place it is misleading, for it suggests to Irish ears a connexion, which it does not really possess, with the spurious divine name Cromm. In the third place the word is not Irish but Breton, and its meaning, " crooked stone," is not satisfactory as a description of monument. In short, the name Cromlech should

be altogether expunged from archaeological treatises, and the name Dolmen substituted in every case. Among the country people these monuments go by a variety of popular names, as " Giant's Grave," *Leaba na bhfian*, *Leaba Dhiarmada agus Ghráinne*, *Cloch toghbhála* and the like.

FIG. 107—DOLMEN OF LIAG AN EANAIGH

The dolmen thus resembles the small cist built inside the earth mound, but differs from it in being as a rule much larger and in not being covered with earth. The latter point has, it is true, been disputed ;

but the probability is that the majority of dolmens which are exposed have always been so. Earth mounds are among the most permanent structures that can be reared by man ; after the surface has become well tied together by grass-roots they are practically indestructible, unless intentionally dug away. Needless to say, anyone who took the trouble to remove an earth mound from his land would not spare the stone structure at its heart. Moreover, there are some dolmens which could not possibly have formed chambers in the heart of the mound. They are too open ; the earth would fill the whole space in and around the stones. A good example is the dolmen of Liag an Eanaigh,[1] Co. Down (fig. 107). Here there is a large stone, 11 ft. long, supported at a height of seven feet by three slender pillar stones. It is quite plain that these stones would become quite buried in the earth, and no chamber would be formed, if a mound were heaped around them.

It is impossible to contemplate some of these gigantic structures without a feeling of wonder. How, we may well ask, were these huge blocks lifted, with the scanty mechanical means at the disposal of stone-age man ? How were they poised and secured so that they have stood unmoved, it may be, between 4000 and 5000 years ? Many of them are built of stones which must have been transported a long distance, as there is no bed of the kind of stone anywhere near ; there is one dolmen in France containing a stone that weighs 40 tons, which must have thus been carried 19 miles. Such labour must mean the co-operation of many men ; such a co-operation means a high degree of social organisation. Large bodies of men must have united for a common purpose before any dolmen could have been built. Every monument of the kind is the record of the unifying power, either

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[1] Joyce gives *Lug an Eanaigh* as the Irish form of this name, but it is perhaps more probable that the place should be called Liag an Eanaigh after the conspicuous monument · the English form, " Legananny," sounds more like *liag* (stone) than *lug* (hollow).

of the word of some chief or medicine-man, or else of the feeling of loyalty to the tribal ideal and to the memory of the dead leader.

Before we proceed to a more detailed description of the form of these monuments, which are among the most interesting that Pre-Celtic Ireland has bequeathed to us, let us glance for a moment at the facts of the distribution of dolmens in the world.

They are found in Japan, after which there is a gap (proceeding westward) till we come to India. After this there is another gap till we meet them again in Syria, the Caucasus, and the Crimea. There are none in Egypt, but they occur in considerable numbers along the north coast of Africa. Crossing into Europe at the Straits of Gibraltar, we find ourselves among a profusion of monuments of this type in Spain ; indeed, Spain contains some of the finest dolmens in the world. On the other hand they are unknown in Italy, except in one district about Otranto, and in the Balkan Peninsula only one example is recorded. Returning to Spain, and crossing the Pyrenees into France, we again find ourselves in a rich dolmen district ; over 4,000 dolmens are recorded as existing in France. Belgium, Holland, and North Germany have a few, and there are a considerable number in Denmark and Southern Sweden. In Central Europe and in Northern and Central Russia they appear to be unknown. In the British Islands they are found in considerable numbers, especially in Cornwall and Wales ; while Ireland is one of the richest countries in the world in this class of monument.[1]

This distribution must have a meaning. It points to lines of influence, travelling along certain ways, touching some regions and leaving others unaffected. It has been supposed by some authorities that we are to picture the activities of a dolmen-building *race*,

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[1] A useful map of the distribution of dolmens, and many illustrations of these and analogous structures, will be found in Fergusson's *Rude Stone Monuments ;* a work for which otherwise there is little to be said.

which spread from some centre of culture and settled in the various countries where these monuments are to be found. Others, with more reason, regard them as the indication of the spread of new ideas, religious or cultural, which affected a number of different tribes. What these ideas were we can but guess. It may be that the dolmens are the enduring monuments of the teaching of some great leader of men in the unrecorded past, who found out a new way of worshipping the gods and of propitiating the dead, and who caused his people to follow in his footsteps. Just as the religion of Muhammad spread from India to Spain, affecting populations differing profoundly among themselves in race and in language, so the forgotten cult, of which the dolmens are the expression, spread, thousands of years before, and by much the same routes, over a yet wider range of territory.

The distribution of dolmens in Ireland itself is suggestive. Down to quite recent times the tradition of encumbering forests covering the plains of Ireland persisted. In the early historical compilations the clearance from their forests is one of the stock actions attributed to the early monarchs ; and as a rule the greater the prowess of the king the greater is the number of the plains that he is said to have cleared.[1] Traffic through the interior of the country must have been difficult, except along the lines of great waterways. Now, if we look at a map of the distribution of dolmens[2] we can see this fact illustrated in a very interesting way. There is a thick belt of dolmens running across Clare and part of Limerick. The

[1] There is a religious idea underlying the clearance of the plains attributable to the kings. The kings being vegetation-divinities, it was probably their special prerogative to cut down trees.

[2] Maps shewing the distribution of dolmens in the four provinces will be found in the first part of Borlase's *Dolmens of Ireland*. It should be remarked, however, that these maps err both by the omission of real dolmens and by the inclusion of unreal ones ! The letterpress of this book, as a whole, must be used with caution, though as a collection of illustrations it is of great value.

northern end of this belt is in Boireann, which stony barony can never have had many trees ; the rest of the belt is accessible from the Sionann, which, with its lakes, must always have been the great highway of this part of the country. In Kerry these monuments are practically confined to the almost treeless sea-coast. In Cork they follow the ridge of the Bograch mountains in the barony of Muscraighe, which were probably comparatively free from forests ; and in Waterford they follow the line of the Siúr, being especially common in the corner intercepted between the estuary of that river and the south coast of the county. Thus in Mumha the dolmens are practically confined to the sea-coast, where the trees would naturally thin out, and to the lines of the great rivers. The same thing is to be noticed in Connachta ; the north sea-coast is full of them—indeed, Sligo is the great county in Ireland for these remains. There is then a little group in the south of Co. Galway within an easy journey of Loch Deirgdhearc, the last of the lakes of the Sionann. The few others that exist in the province are scattered along the brinks of conspicuous rivers, with the exception of a belt running right through Mayo from north to south, and clearly following the line of the three great lakes, Con, Measca, and Oirbsean, which before the introduction of railways were the chief means of communication into the heart of the province.

In Ulaidh the rule is not so conspicuously observed as in the other provinces ; but even there the majority of the dolmens, and the only large groups, are on the sea-coast, and in the lands watered by Loch Earna. We may notice especially a group near Loch Suileach, which contains the majority of the Donegal examples ; and on the other hand the comparative emptiness of Tyrone.

Laighean shews conspicuously the same thing as the other provinces. The only groups are on the coast in Dublin, on the Siúr in Kilkenny, and on the Bearbha in the same county, as well as on the Bóinn in Meath.

In considering such a question as the distribution of dolmens we must not forget another matter—the presence or absence of stones suitable for building such structures. But even this is bound up with the foresting of the country and to a large extent depends upon it. We have seen that stone-age man was both able and willing to undertake the enormous labour of transporting stones of great size and weight, whenever it was necessary to do so. But nothing would have been a greater hindrance to such operations than a dense growth of forest trees, with its attendant undergrowth and brushwood—a pathway would have to be cleared through the obstruction. Further, the existence of a forest implies soil, and a consequent inaccessibility of blocks of suitable stone. We may therefore fairly conclude that the distribution of dolmens depends directly on the ancient forestation of the country.

It is natural to ask ourselves how these gigantic blocks were raised. This question can be answered only by conjecture. It is not likely that any very elaborate system of levers was in use ; there are schemes published in various books which involve the use of complicated frameworks of timber, with highly ingenious mechanical apparatus. These are scarcely convincing.

To arrive at a more acceptable conclusion, we must first postulate an unlimited quantity of labour available, either willing or forced. Further, we may assume that the builders had the use of some kind of ropes ; of large beams of wood which they could use as simple levers and rollers ; and of some apparatus for digging. And we must also assume that the work was directed by an overseer, competent to see that the stones were sufficiently firm to bear the weight of the cover-slab, and that the space between the uprights was not too wide to be spanned by the stone selected to lie upon them. With these postulates we can reconstruct the process with fair probability (fig. 108).

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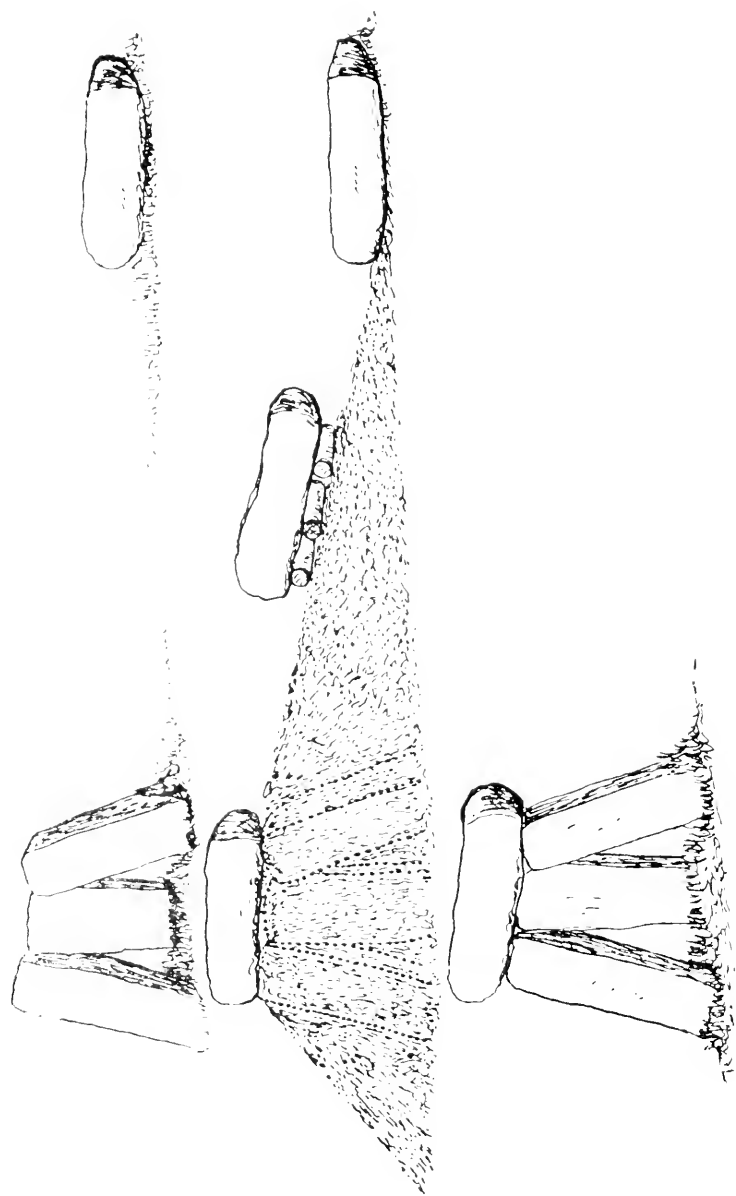
FIG. 108—DIAGRAM TO ILLUSTRATE THE CONSTRUCTION OF A DOLMEN

The first thing to do would be to deposit the uprights on the ground, in such a position that their feet were approximately over the spot which they were intended to occupy; the cap-stone lying at a little distance away. This placing of the stones would be done with the aid of ropes and rollers.

The next step would be to dig the pit for the feet of each upright, one by one, and to raise the stone gradually with levers to slide it into position. It would be supported at each stage of the process of erection by wedging stones or earth underneath it. Small stones were wedged around the feet of the uprights, to hold them firmly in position.

So soon as it was certain that the uprights were fast in the ground, an earth bank would be built up, sloping down from the top of the supporting stones to the place where the stone intended for the cover-slab was lying. This stone would then be dragged up this slope with the aid of rollers, and when set in position the earth bank would be dug away. The monument was then complete.

For what purpose was such great labour undertaken? Popular archaeology has answered this question by calling these monuments " druids' altars." [1] It is not impossible—indeed, it is highly probable— that rites involving sacrifices in honour of the dead took place periodically around these monuments. But the idea that they were altars cannot be admitted for a moment. They may look like altars to the superficial observer, but when they are examined in detail the difficulties of such an explanation become obvious. An altar would require a flat and horizontal upper

[1] It is perhaps unfair to put the blame for this foolish idea on " popular archaeology." A great deal of harm has been done, in Ireland, by semi-instructed persons airing their accomplishments before country folk, or scribbling in newspapers, and thus contaminating the traditions. It is not unlikely that many notions about " druids," " druids' altars," " giants' graves," and other puerilities, have been imported thus by " Vallanceyites " into local nomenclature.

surface in the cover-slab : these monuments are almost always rounded on the upper surface, and often the cover-slab is oblique. Moreover, some of the monuments are of considerable height : the " druid " would have required a ladder to climb to the top, and it is far from obvious how he could have dragged a recalcitrant victim up with him. However, we need not waste any more space in discussing a theory (like that of the pagan origin of the Round Towers) which, if anyone dared now to maintain it seriously, he would *ipso facto* gain a place among, let us say, the unnecessary part of humanity !

The probable explanation is that dolmens were meant to represent houses, dwelling-places for the shade, differing from his earthly habitation in being more permanent. That the structure is a good imitation of a house is shewn by the fact that some dolmens have actually been inhabited by poor squatters in quite recent years. This " house of the soul " would be made a receptacle for gifts and offerings made from time to time to the dead man by his surviving friends. It was not necessarily the burial-chamber proper—indeed, in many if not in most cases it cannot have been the burial chamber, as it would have been too open for that purpose. The actual interment was made in the earth underneath, and the dolmen erected over it, like a monument.

A few dolmens in Ireland have sculptured marks upon them which, however, are quite unintelligible.

FIG. 109—MARKS ON THE DOLMEN AT LEANAN

Some figures on a dolmen at Leanán, Co. Monaghan, are not unlike Runic characters, but are without alphabetic significance (fig. 109). At Caiseal Dearg,
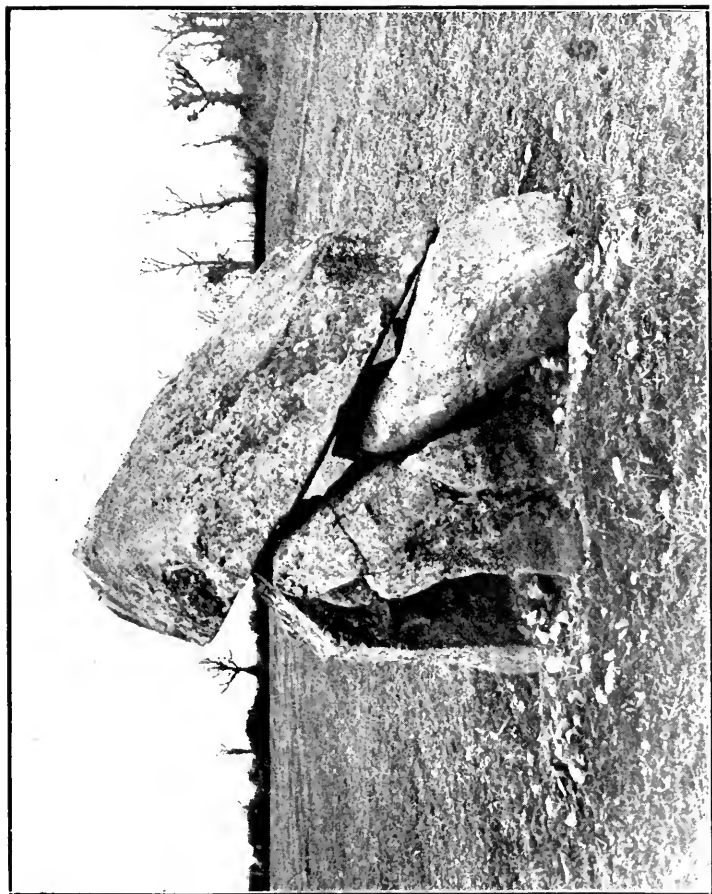
FIG. 110—NORMAL DOLMEN

Co. Tyrone, there is on one of the stones a series of cuts and scratches, but these may be nothing more recondite than the marks made by sharpening tools. On a dolmen called "The Bealick," near Magh Cromdha, Co. Cork, there are some cup-like marks.[1]

There are several types of dolmen exemplified among the Irish specimens.

The simplest, but at the same time one of the rarest, is the so-called *trilithon*, which consists of only three stones—two uprights and one cover-stone. Loch Muine, Co. Down, has an example. The well-known trilithon on Sliabh Callainn in Clare is not to be counted among this class of dolmens. There were originally other stones besides the three of which the structure now consists, but these have been removed in modern times.

The normal type of dolmen, of which there are any examples through the country (fig. 110), consists of a single capstone, supported by more than two uprights—most commonly three, but sometimes more. At Ceall Tighearnáin, in Co. Dublin, there is a dolmen with as many as eleven uprights. The roofing-stone in this monument is estimated to weigh 40 tons (fig. 111).

There is a variety of this type in which the cover stone is not raised wholly from the ground, but supported in a sloping position. Among the monuments of this class may be mentioned the huge dolmen in the demense at Howth, Co. Dublin. Its capstone weighs 70 tons. It need hardly be said that Sir Samuel Ferguson's well-known poem on this monument is nothing but a poet's fancy, and has no claim to present an authentic history of the structure : indeed, it is perhaps a pity that it has popularised an idea so impossible as that the dolmen commemorates a lady of the Fenian cycle.[2] Another great monument of this class is in the demesne of Mount Browne,

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[1] See illustrations in Borlase's *Dolmens*, and JRSAI IV, ii, 524, 526.

[2] Dolmens, though so common in Ireland, are never mentioned in ancient Irish literature. O'Donovan's identification of "The Giant's Table" in N. Mayo with "The Tomb of the Maols" is preposterous.

FIG. 111.—DOLMEN AT CEALL TIGHEARNAIN

near Carlow (fig. 112) ; its capstone weighs 100 tons—
the heaviest known capstone in all Europe.   Both the
Howth and the Mount Browne dolmen may at first
have been of the normal type, in which the whole
capstone is raised from the ground, but I hardly
think so.   If these great stones had slipped into the
position which they now occupy, they would most
probably have brought down all the supporting-stones
in their fall.

FIG. 112—THE MOUNT BROWNE DOLMEN

In another variety the cover-slab is partly supported,
not on uprights but on a subsidiary cover–slab.   A
magnificent example of this type, one of the finest
in Ireland, is the monument known as Leac an Scáil,
near Muileann an Bhata in Co. Kilkenny.

The above are all varieties of what may be called
the dolmen proper.   But there is a closely related
structure, the *allée couverte*, which presents us with
fresh varieties.   In the *allée couverte* there is a series
of cover-slabs, supported on two rows of uprights,
which most usually are parallel, but sometimes are

slightly expanding, so that the plan of the structure is wedge-shaped. Good examples are to be found in most counties.

Some dolmens are surrounded with enclosures of stone or earth. The most notable example is perhaps the Giant's Ring at Druim Bó, Co. Antrim. This consists of a dolmen, now rather dilapidated, inside an earthen ring 580 ft. in diameter. The purpose in all such cases was to mark out a sacred enclosure around the monument, not to be trodden by profane foot—also, very likely, to confine the ghost of the dead, and to prevent it from issuing forth to harm or terrify the living. Good examples of dolmens with stone enclosures are to be seen at Ceathramhadh Mór, Co. Sligo, and Baile an Tuaidh, Co. Antrim. The latter dolmen has a double stone enclosure, most of which has, however, been removed for road-metal or building purposes. A carn of stones formerly covering the dolmen has also been removed.[1]
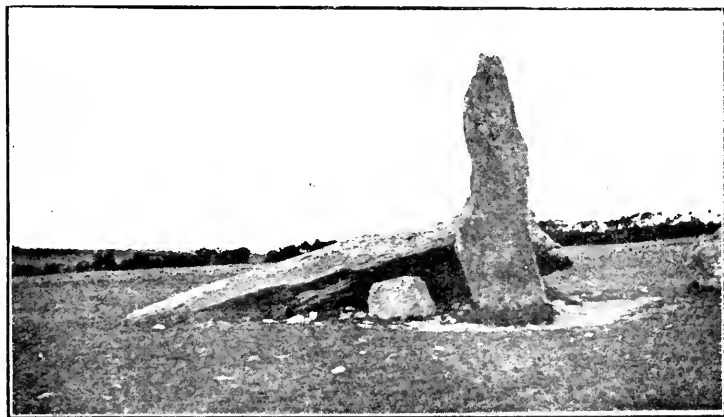
Fig. 113—Dolmen at Ruadh Mór

Less common is the association of a dolmen with a standing stone. A good example (fig. 113) is at Ruadh Mór, Co. Cork.

[1] Illustrations of the dolmens here referred to, and of many others of the same types, will be found in Borlase's work.

XI. With the beginning of the Bronze Age a new method of disposing of bodies of the dead began to spread over northern and parts of southern Europe. Hitherto the bodies have been *buried*, with or without grave-goods, inside a stone cist in the heart of a tumulus ; or under a dolmen ; or else in a simple grave, with or without a stone lining, in the earth. But now the practice of *cremation* makes its appearance in the regions named ; and though for a long time there was, so to speak, a struggle between the two rites, the latter custom ultimately prevailed, and became the normal mode of disposing of the bodies of the dead.

This radical change in sepulchral rites must be the index of a deep-rooted change in the way of looking at the religious aspect of death. We cannot suppose that a material resurrection or re-vivification of the body was expected by people who adopted the most efficient means of destroying it. On the other hand, the continuance of the practice of depositing grave-goods in, if anything, an increasing abundance, is a witness of the continuance of the belief in a life after death.

The whole subject has been discussed, with a wealth of illustration, by Prof. Ridgeway.[1] The numerous examples which he draws from Classical sources, but which need not be specifically detailed here, shew that the idea underlying the practice of cremation is something like this :—After death the soul remains near the body, flitting about it. Even when the bones have been long buried, the soul is still in the vicinity, and can be transferred by digging up and translating the remains. This belief was turned to practical account, when some ancient hero was taken from his grave to another land, which hoped to have the unseen co-operation of his ghost in military enterprise. But when the body is burnt, the soul's anchor is destroyed ; the ghost departs to the realm of spirits, never to return. Admission to this realm cannot be obtained

[1] *Early Age of Greece*, vol. I, chap. vii.

unless the body is burnt, and offerings made for the use of the spirit must also be burnt. Thus, Herodotus[1] tells the story of a dead wife appearing to her husband, and complaining that she was cold in the land of spirits, because the garments deposited in her tomb had not been burnt, so that she could make no use of them. The burning etherealised the offerings, turning them to the vapour of smoke, and so made them available for the etherealised shade.

XII. The burial ritual as followed in Ireland during the Bronze Age was very far from being uniform, so far as we can judge from the few bronze-age tombs that have been scientifically examined. The bronze-age burial-places in Ireland can be thus classified :—

A. *Earth Burials*

1.—Body deposited in earth without protection.
2.—Deposit protected with a cist ; no carn or tumulus.
    The cist may or may not be surrounded with an enclosure or otherwise marked.
      a. The cist underground.
      b. The cist at or above the surface of the ground.
3.—Deposit protected with a cist, covered with a carn (of stones) or a tumulus (of earth). There may be either a single cist or a plurality of cists in the covering structure.
      a. The cist underground.
      b. The cist at or above the surface of the ground.

B. *Cave Burials*

1.—The grave deposit in a natural cave.
2.—The grave deposit in an artificial cave, *i.e.*, a chamber built up with a regular means of approach.
      a. The chamber below ground.
      b. The chamber above ground, covered with a carn or tumulus.

[1] *History*, V. 92.

In the above table the word " burial " includes cremation as well as inhumation interments.

We now give one or two examples of each of these classes of burial : but no full list of all that have been found or described can be attempted here.

XIII. [A. 1] : *Earth burial without protection.*—The bodies of the " rank and file " of the population were, no doubt, simply buried in the earth, without coffins, urns, or other receptacles. When such was the case both the ashes (in the case of a burnt body) and the bones (in the case of an unburnt body) would become mingled with the soil ; and if no grave-goods were deposited with the interment, all trace of it would in time perish, even the bones decaying away to nothing in our damp climate. As a rule, therefore, the burials of the poor of the population are no longer to be found. Even when the skeletons come to light, in soil favourable to their preservation, the absence of grave-goods makes it impossible to identify the interment with certainty as belonging to the Bronze Age. When the body after burning was placed in an urn, and the urn buried in the ground, identification is naturally easier. A good typical instance of this is the deposit found at Lann Abhaigh in Co. Antrim.[1] Here there was found in a gravel-heap an urn filled with calcined bones, with a second urn inverted over it. At a distance of 5 ft. from this deposit there was a human skeleton doubled up and lying on its back. In the next field there was found, in a gravel-pit, an urn inverted over calcined bones, with a stone resting on its upturned bottom. There were no flints or bronze objects near this ; and the field was quite level and showed no external sign, in the shape of mounds or stones, of being the site of a cemetery. The two urns in the first deposit were of the food-vessel type, and were elaborately decorated with a variety of linear ornaments. The other was a cinerary urn, plain except for some ornamentation round the rim, and a ridge surrounding the body of the vessel.

[1] UJA II, v, 24.

Analysing this deposit, we find the following essential elements :—

(1) The absence of any surface indications of the interment.
(2) The absence of grave-goods.
(3) The presence of both cremation and inhumation.
(4) The *buried* skeleton being in a crouched position.
(5) The different disposition of the urns—in the one burial the urn containing the ashes was right-way up, in the other it was inverted.
(6) A flat stone laid on the bottom of the upturned urn.
(7) The burial in a *gravel-bank*, which is a convenient method of burial apparently not uncommon in Ulaidh.

It might be possible to explain the presence of cremation and inhumation in the one cemetery as accidental, the two types of deposit belonging to different periods ; but there are other examples to which we shall presently refer, that make it admissible to suppose that the two were contemporary. The crouched position of the skeleton is a frequent attitude of burial, descending from the Early Stone Age. The stone deposited on the upturned urn may have had the intention of confining the ghost still more effectually.

Dr. J. Sinclair Holden[1] has recorded, but without details, that it is very common for urns to be found " in the Glens of Antrim " containing ashes. In some of these cases the site has no external mark, in others a large rude stone stands close by.

The deposits that were found on the site of Campbell College, Belfast, add something to that described above. Here in a low gravel mound two urns were found, between 1 and 2 ft. below the surface, and about 10 yards distant from one another. They stood mouth downward. A small urn, of the form called " incense-cup," mouth upward, was inside the smaller of the urns, resting on its contents. In the same ridge were " about 20 small graves " (presumably stone cists) about 2 ft. long by 1 ft. wide, filled with gravel

[1] JAI, i, p. 219.

and soil, each containing a few fragments of bone and charcoal.[1]

Here, as before, we see—

(1) The absence of any surface indication of the graves.
(2) The commingling of urn burial and cist burial, with cremation in each case.
(3) The absence of grave-goods.
(4) The deposit of the urns, differing in form from that at Lann Abhaigh, no stone being used in the present case.
(5) The ritual use, whatever it may have been, of the " incense-cup."
(6) Cist-burials without urns more numerous than burials with urns.

Near Coillidhe Bacaigh, at a place called Geal-ghorm Parks, was a natural mound of sand utilised as a place for burial deposit.[2] Four urns were found, three of them placed standing on flat stones, mouths uppermost ; the fourth was inside one of these. There were no cists. The urns were close to the surface. Near to the place where they were found there is a small basin-shaped cavity, $4\frac{1}{2}$ to 5 ft. in diameter, and surrounded with a raised rim 2 to 3 feet broad, locally called the " Devil's Punch-bowl." The earth inside this cavity is quite black, and it has been suggested that it was here that the cremation was carried out. However that may be, these deposits give us further differences in detail. The urns were placed upright, apparently with nothing to prevent the overlying earth from falling into them (for there is nothing said in the description about stones or other coverings being used for the mouths). The urn inside the other takes the place of the " incense-cup " in the Campbell College deposit. Otherwise we have the same appearance as before—deposit of burnt bones in urns without grave-goods, and without any external indication of the deposit.

[1] UJA II, ii, p. 184.
[2] UJA II, i, p. 94.

Dún Droma, Co. Down.   Here were found ten urns at a depth of 3 feet, all bottom upwards and resting on stones ; they contained charred bones.   In addition, a small ring of shale, about an inch in diameter, was found in one of the urns.   Here we have a more uniform series, all conforming to what was probably the *normal* type—the urn inverted with its mouth resting on a flat stone.   The small ring of shale is the first indication we have met with of the possibility of grave-goods in these simple interments.   In the same bank which contained these urns there were a number of graves, and to have been about $3\frac{1}{2}$ ft. long by 1 ft. 2 ins. broad, and 1 ft. 6 ins. deep, containing bones.   They were all destroyed by the workmen employed in making a bridge, the excavation for which revealed the burials.   It is practically certain that these were stone-lined iron-age graves, and that their association with the urn-burials was nothing more than accidental.[1]

Creagan, Co. Antrim.   Here were found three urns, containing burnt bones of a man and of a large animal, as well as a triangular dagger of bronze.   The urns were buried in a gravel-heap, but the relative position of the human and the animal bones is not clear.[2]

A very curious burial is described by Mr. G. Coffey, who excavated it on the townland of Fearta, near Loch Riabhach, Co. Galway.[3]   It may be described as an *earth-burial above ground*.   The principal body was cremated, and placed on a block of stone lying on the old surface of the earth : over it an urn was inverted. A mound of earth and stones (present dimensions 40 ft. diameter and 9 ft. height), had then been heaped over the deposit ; and in the upper part of this there was a second interment ; this time of a young woman, unburnt.   With her were some bones of a small horse, and the leg-bone of a red deer, as well as picks made

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[1] UJA I, vi, 164,

[2] PRIA, xxxiii, C, p. 1.

[3] G. Coffey, *On the Excavation of a Tumulus near Loughrea, Co. Galway*.   PRIA, xxv, C, 14.

of the horns of the same animal. This has every appearance of having been the body of a slave, sent to minister to her lord in the other world : it can hardly be explained as a secondary interment subsequently intruded on the mound, as a stratum of sand, more or less parallel with the outer surface of the tumulus, ran above the second interment and was unbroken. The different treatment of the two bodies—burnt and unburnt—is thus suggested to denote a difference of social caste.

[A. 2] : *Cist-burial.*—In this form of interment (with cremation or inhumation) a receptacle is made by means of slabs or stones, in which are placed the human remains and the grave deposits. Cist burials may be made with or without urns, and the cists may be wholly sunk in the ground, or may be wholly or partly exposed.

Of the simple type we may mention as an example a find at Thorny Valley, near Baile Meadhonach, Co. Antrim.[1] Here workmen digging in a field came on the cover of a cist which they removed ; the cist was found to contain an urn, mouth downward, resting on a flat stone. The sides of the cist were formed of five stones, making a five-sided chamber. There were no grave-goods of any kind except the urn, beneath which there was a quantity of white calcined bones.

The essential points of this burial are—

(1) The use of a cist.
(2) The absence of surface indications.
(3) The absence of grave-goods.
(4) The inversion of the urn.

At Ceall Bhronaigh, Co. Mayo, a bronze-age cemetery was discovered early in the last century. It is described, not very satisfactorily, in the *Gentleman's Magazine* (1827, vol. ii, p. 541), where it is reported that up to the moment of writing ten urns had been found. It is not stated how they had been deposited,

[1] UJA II, i, p. 93.

but one of them " contained a very small vessel, supposed to be a lachrymatory."[1]   There was also found " a small tomb in form of a chest," 1 ft. 6 ins. long and a foot wide, which contained stones and an arrow-head of flint.

Analysing this description we gather—

(1) The co-existence of plain earth burial with urns and of cist burial.   This suggests the possibility that a difference of social position was indicated by the difference of ritual. The single cist-burial may well have been that of a chief, the plain urn-burials those of his retainers.

(2) The exclusive use of cremation.   We are not told that the body in the cist was burned, but we may infer this from the small size of the receptacle.

(3) The use of an incense cup, apparently in one urn-burial only.

(4) Grave-goods very scanty, and confined to the cist-burial.

The urn-burial found at Greenhills, Tamhlachta, Co. Dublin, which has been ingeniously transported to the Royal Irish Academy's collection in the National Museum, may here be mentioned.   This deposit adds a new feature to the urn-burial in cists, in the shape of a food-vessel.   An incense-cup was lying upon the contents of the cinerary urn, which was inverted.[2]   At Brugh Dearg, Co. Tyrone, another cist burial was found with an incense-cup inside the urn.[3]

The cist is sometimes double.   A good example was found at Oldbridge, Co. Meath.[4]   This contained a decayed skeleton (female) with food-vessel and associated jet beads.

At Lug an Chuirín, Queen's Co., were found two cist burials of some importance.[5]   There were here two cists, one single, the other double, lying parallel

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[1] A theory not much more improbable than that which gives the current name " incense-cup " to these small vessels.

[2] See the account of this burial in PRIA, xxi, 338.

[3] JRSAI, xv, 740.

[4] PRIA, xix, 747.

[5] M. W. Lalor, *On a recent discovery of kists containing human remains, on a farm at Luggacurren, Queen's Co.* JRSAI, xv, 446.

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one to the other : the double cist was divided into two unequal divisions with a cross-slab, but covered with a single slab extending over its whole length.   Each cist contained an unburnt skeleton : these must have been deposited in a crouching position, though this is not definitely stated.   No satisfactory description of the bones has been published.   The cists were 3 yards apart and lay east and west : in the south-east corner of the two largest receptacles there was an urn. These urns contained, in addition to a little earth, " two little links of beads of some mineral substance of a bluish colour " highly polished and finished, and two bronze armlets.   On the cover-stone of one of the cists, on the under surface, was a conical cup-mark.

The essential points of this interment are—

(1) The deposition of unburnt bodies in the crouching attitude in the cist.
(2) The deposition of grave-goods in the cist—a very rare circumstance.
(3) A cup-mark in the cover-stone, which, perhaps by oversight, had been turned upside down.

Cup-marks have been found elsewhere upon the stones of cists.   In a cist-cemetery at Druim na Coille, Co. Tyrone, where a number of very fine urns came to light, one of the cists had on its floor-stone two cup hollows on one face, one on the other.[1]

The subject of cist-burial above the surface of the ground introduces us to a bewildering study.   There is a great variety of partly exposed stone structures still existing in Ireland, most of them probably belonging to the Bronze Age, and connected with burial, but so diverse in plan among themselves that it is next to impossible to classify them.   The difficulty is increased by the unfortunate fact that they have suffered shockingly at the hands of generations of those pests, the seekers for hidden treasure.

[1] JRSAI, xii, 510.

We may say in general that these structures consist of comparatively small stones set on edge, marking out enclosures, each of them of sufficient size to hold an urn, or a parcel of ash from the burning of a body. We may presume that they were all originally covered with slabs, but it is very rare to find these remaining intact, thanks to the attentions of treasure-seekers. Normally they are rectangular, though they are sometimes wedge-shaped : sometimes there is only one enclosure, but in many there are more than one—usually arranged in a row.

An important group of cist-burials are those in which there is an external mark of the grave—either a standing stone, or an earth or stone enclosure, such as we have already seen in connection with dolmens. Among these we may mention especially the burial at Long-stone Fort, near Nás, Co. Kildare, the excavation of which is fully described in the publications of the Royal Irish Academy.[1] Here there was a cist sunk in the ground, without a cover, intended for two persons, and containing the burnt remains of (apparently) a man and a woman, a flint chip, a fragmentary wrist-guard of an archer, and a scrap of pottery. Beside the carn rose a tall standing stone, 17 feet above ground ; and an earthen bank surrounded the whole, enclosing a circular space a little over 100 ft. in radius, with the standing stone in the exact mathematical centre.

The excavation of this burial had important scientific results. For the facts upon which the following statements are based, we must refer the reader to the original article in the Royal Irish Academy *Proceedings*, mentioned in the footnote. The burial took place on the top of a hill which, though not of great size, commands a wide view. The first step was the lighting of a great beacon-fire, which must have been seen far and wide ; presumably to summon the clan of the deceased.[2] The grave was then dug and the cist made,

[1] PRIA, vol. xxx, C, p. 351.
[2] Or possibly for the simpler purpose of destroying an inconvenient growth of brushwood.

and the body of the dead man (probably also of his wife, slaughtered that she might accompany him to the world of the shades) was burnt inside the cist—the stones of which bore marks of a severe fire.   The grave having been filled in (there was no cover-stone on the cist), the pillar-stone was erected, most likely by a process analogous to that which we have already described in connection with the raising of dolmens— an earth-bank was built, having a sloping side, up which the stone was rolled and dropped into the hole prepared for its reception.   The earth bank was then dug away, and the enclosing vallum traced out by means of a rope tied to the standing stone at one end and swept round as a radius.   It was noteworthy that a hollow was formed in the underlying rock for the reception of the foot of the standing stone, which was wedged up with blocks of stone to keep it firmly in position.

For what purpose was this standing stone ?   Naturally, it will be said, to mark the grave.   But the grave is already sufficiently marked by means of the earthen fortification surrounding it.   We have to consider this question in connexion with the whole subject of standing stones.

Both in Ireland and the Scottish Highlands standing stones are often called *Fear breagach*, " a false man." A stone of this kind would hardly suggest such a name to a modern, unless there were a tradition behind it. It points to the time when the stone was really meant for a man.   It is not exactly to be regarded as a statue ; rather is it a receptacle for the life or the soul of a person buried underneath it.   The idea that the life of a man passes into that of a tree or plant growing over his grave is a commonplace of folk-lore.[1]   It is unquestionably at the basis of the feeling so prevalent

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[1] Among instances of such a belief I need mention only the well-known tale of Baile and Aillen (for which see Hyde's *Literary History of Ireland*, p. 117) and—to go far away from Ireland—a tale which will be found at p. 117 of my grammar of *The Language of the Nawar of Palestine*

in Ireland against the trimming of the graves in the cemeteries. Our English visitors, who contrast the untidy Irish graveyards with the neatly kept God's acres of their own land, and draw conclusions much to the disadvantage of Ireland and her people, are blissfully unaware that they are in the presence of a tabu of imposing antiquity, which has its roots in the strivings of ancient man after an expression of his instinct for immortality. I do not say that if we could get inside any modern peasant's mind we should find in all its crudity the idea that the grass growing over his dead relative's grave was really quickened by the life of the departed, and that it would therefore be an act of impiety to cut it. But beyond all question the peasant's far-distant ancestors held that belief, and their modern descendant, though he has forgotten their faiths, has not forgotten the prohibitions that were founded on those faiths.

Where there was no tree, a stone would serve ; and it may be that a stone was intentionally substituted for a tree after it had been observed that trees were after all not permanent grave-marks, but that they were subject to decay. This would be especially reasonable as there was a notion that stones had a life of their own, manifested by *growth* : this belief is indicated by survivals of it still to be found. A well-to-do Meath farmer has pointed out to me a curious mark on a stone in his field, and has explained it as being due to the pressure of another stone *while it was growing*.

[A. 3] : *Cist-burial in an earthen or stone mound.*— An example of such a monument, with the cist sunk wholly or partly beneath the surface of the ground, was opened in 1858 in Moat Meadow, near Beal-atha Hill, Carraig Fhearguis. Unfortunately the report of the excavation, published in the old series of the *Ulster Journal of Archaeology*,[1] is an excellent model of " how

[1] Vol. vi, p. 169.

not to do it." The mound was nearly circular, 45 ft. in diameter, and 7 ft. in maximum height. Within a foot of the level of the field there was a layer of flat stones, under which was a stratum of what the writer of the article calls " fossil earth," containing snail-shells and bones of deer [?] and of the ordinary domestic animals. Under the " fossil earth " were the two clay strata with a bed of peat between : in this were numerous fragments of flint, all " more or less bearing marks of having been artificially shaped "—a description which for vagueness it would be hard to beat ; and at the level of the layer of peat, exactly in the middle of the mound, was a cist (dimensions not stated) filled with a glutinous clay mixed with ashes, at the bottom of which, at the depth of 5 inches, were two semicircular stones. Two or three feet to the north of this were 27 amber beads " of rude shapes," pierced : several rude specimens of flint arrow-heads were also found in the clay, along with a number of globular stones about the size of a grape-shot. No human remains were found, with the exception of a small bone which was " pronounced on competent authority to be very like one of the small wrist bones of the human body." If the authority unnamed could not make a better attempt at identification than that, he was scarcely competent !

The description quoted above is so confused that it is difficult to make out exactly the disposition of the burial. This is unfortunate, as the interment seems to have been of considerable importance. In a properly regulated country, archaeological excavation by a person so obviously incompetent as the writer of this notice would be absolutely prohibited, under heavy penalties. For the mere act of excavation is necessarily destructive ; and only long experience, training the eye to note, and the pen and pencil to describe clearly and to draw, the different stages in the removal of the earth, can justify anyone in undertaking a task so delicate. The two semi-circular stones

recall similar slabs of stone found elsewhere in bronze-age burials, for holding the pile of ashes when there was no urn.   It is curious that the amber beads would appear (so far as the confused description permits us to judge), to have been outside the cist ; this suggests that they have no real connection with the burial, and that it had been dumped on an old habitation-site. Perhaps the owner was buried on the site of his dwelling.

In the year 1748 a ploughman at work in a field at Carn Fhiachach, near Muilleann Gearr, Co. Westmeath, drove his plough through a " sandy hillock " which, not improbably, was the relic of the carn which gave the place its name.   However that may be, he struck a large stone which proved to be the cover-stone of a cist.   The account which we have of the discovery seems to have been written some time afterwards, and from hearsay evidence only : it was communicated by Bishop Pocock to the Society of Antiquaries of London, and published in vol. ii of *Archaeologia* (1773).   It appears that there was an unburnt skeleton in the cist, which we are told (as is usual in old, and even some recent, accounts of such interments) belonged to a man "of a size greatly above the common proportion." An urn was deposited with the skeleton, which was roughly handled and fell to pieces.   The bishop also describes and figures a gold ring, " set with twenty-five table diamonds," alleged to have been found in the cist, but which is obviously modern—possibly seventeenth century, but certainly not older.   He further comments upon the " singularly curious attire, or ornament, of the head ; for it was covered with an integument of clay, as with a cap ; the border whereof, neatly wrought like Point or Brussels lace, extended half-way down the forehead.   Upon handling, it mouldered into dust, so that no drawing was made of it."   This may have been another urn, but more probably it was nothing at all—merely earth lying on the skull, in which the too-vivid imaginations of the spectators traced the wonderful ornament described.

This interment was multiple, for round the cist were ranged five smaller cists, arranged thus—
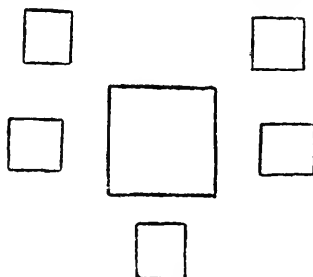
—and containing nothing but human bones.   The bishop, in his article quoted, draws the obvious con-clusion that the monument commemorates a chieftain surrounded by five of his followers who fell in some battle.   It may also be a man surrounded by five slaves, slaughtered to keep him company and to do him service in the world of shadows.   A similar group of five cists was found, according to Pocock, on the lands of Adamstown, about half a mile distant.   In this latter group, however, there seems to have been no larger cist.

There are a greater number of examples of cists above ground, protected by tumuli or carns.   In the Manor of Lindsay of Luachra, Co. Tyrone, there was an old mound of earth called " The Moat " ; on the top of this mound, covered by about 8 ft. of earth, a cist was found in the year 1800.[1]   It measured 3 ft. in width and 4 ft. in length.   It was built of flagstones— bottom, top, and four side stones.   Inside it was an urn, full of fine earth and ashes and burnt bones ; there were no other deposits.

Mr. Wakeman describes[2] a tumulus at Coill Ui Cearnaigh, Co. Cavan, which displays a combination of these types—i.e., the cist above and under the ground. In this case the cist was erected on the summit of a natural esker, and was then heaped over with earth,

[1] *Gentleman's Magazine*, 1802, II, p. 1185.
[2] JRSAI, xv, 189.

the esker forming the heart of the mound. This cist contained an urn, a polished stone axe-head, and a peculiar bone object resembling a fragment of a buckle. In a neighbouring cist on the slope of the mound, and probably belonging to a secondary interment, were fragments of pottery with ornaments in relief, and two flints—one a rude knife, the other a well-chipped arrow-head.

Another good example, this time inside a stone heap, was the monument lettered " Carn O " in the great series on Ceathramhadh Caol Mountain.[1] This stone-heap contained a small pentagonoid cist, with a sort of antechamber, also pentagonoid ; it contained an urn and some burnt and unburnt bones, but nothing else.

The majority of such structures are circular in plan : but there is one, also on Ceathramhadh Caol (carn E) which recalls the " horned barrows " of Scotland. It is a mound of stones 120 ft. long and 35 ft. in maximum breadth. The burial cists—two in number with a passage between them—are at one end. At the other end the pile of stones splits into two " horns " : but except the cists just mentioned there are no constructions inside the heap of stones.

The hill-top grave of Cnoc Baine, Co. Tyrone, which is important on account of its sculptured stones (referred to on a preceding page) belongs to this group. The earthen mound has been nearly all dug away, probably by treasure-seekers, exposing the now much-dilapidated cist.

Even more remarkable is a carn at Dubh-ait,[2] near Florencecourt, Co. Fermanagh (fig. 114). This consists of a complex carn, in three divisions, at the centre of a heap of stones, from which radiates five projections of a maximum length of 60 feet. Though no other

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[1] For the account of the excavation of this series see PRIA, vol. xxix, sect. C, p. 311.

[2] This name (Anglicised Doohat) has been explained as *Dumha ait*, " the place of a tumulus " : but such an interpretation is hardly possible syntactically.

example of a structure of this type from Ireland seems to have been recorded, it is not unknown in the North of Scotland : several are figured in Anderson's *Scotland in Pagan Times*, second series, p. 231, ff.[1]

FIG. 114—CARN AT DUBH-AIT

As illustrating the same type of burial with a multiplicity of cists we take two important examples.

The first is the mound of Mount Stewart, Co. Down, now almost completely annihilated. It stood in a plain near the " Temple of the Winds " on Mount Stewart demesne, and had the appearance of a carn

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[1] The Irish example is described by W. F. Wakeman, JRSAI, xvi, 163, ff.

about 5 ft. high and 30 ft. in diameter at the base.[1]
Unfortunately a " projector " from England took it
into his head that the appearance and utility of the
plain would be improved by draining it and filling up
the trenches with the material of this heap of stones.
When the process of carrying out this nefarious scheme
began, the workmen found, at the south side of the
heap, a great stone, covering four flag-stones set on
edge and forming a cist.   Inside it was a small earthen
vessel, which the labourers, of course, imagined would
contain hidden treasure ; they broke it, but there was
nothing inside but a small quantity of blackish granu-
lated earth.   A large number of similar cists came to
light one by one—how many is not known.   Dr.
Stephenson, apparently quite arbitrarily, says that
there cannot have been much less than sixty or seventy ;
but Vallancey's account (communicated by a " Mr.
Templeton of Belfast ") though giving no information
on this essential point, does not suggest so large a
number.   The rude plan accompanying Vallancey's
account shows fifteen small cists.   In each there was
an urn, about the size of a quart measure.   The bottoms
of the cists were strewn with fragments of bones that
had been exposed to an intense fire, and with bits of
charcoal ; in some a little gravel was mixed with the
rest of the contents.   In the heart of the carn there
was a cist four times the size of the others ; it was
empty.   The other cists, all of which contained an
urn in their north-western corners, were to the south
of the large central cist ; apparently the north side of
the carn contained no cists.

[1] The only records remaining of this remarkable monument are
an account in Vallancey's *Collectanea* (vol. vi, p. 291), and a descrip-
tion in a pamphlet by Dr. S. M. Stephenson of Belfast, entitled
An Historical Essay on the Parish and Congregation of Grey Abbey
(Belfast, 1828). The latter description is reprinted in *Ulster Journal
of Archaeology*, old series, vol. ix, p. 111. It is clear, on comparing
these accounts, that Stephenson's is a mere paraphrase of Vallan-
cey's, and therefore of no independent authority. It is not certain
whether the dimensions given were obtained by actual measurement,
or were mere eye-estimates ; probably the latter. The mound
was, most likely, rather larger than is here stated.

Of this very remarkable structure the " English projector " has left nothing but a melancholy fragment of the central cist. The regularity of the construction of this carn, and the remarkable fact that all the urns are placed in a definite part of the cists, indicate that the burials must all have taken place at one time. The empty central cist of large size, with its accompaniment of subordinate cists, enable us without undue straining of the imagination to regard this carn as the monument of some great military disaster which involved in ruin a bronze-age chieftain and a considerable number of his followers. The chieftain's body could not be recovered. His ghost was, therefore, in accordance with the custom alluded to on a previous page, propitiated by means of a mock burial. The followers were burnt on the funeral pyre, and their ashes ranked behind the receptacle which should have held the remains of their leader. Indeed, it would almost seem as though we are to see an actual military grouping of the tombs. King Loiguire was buried at Teamhair standing upright in his armour, with his face turned towards Laighean, " for he was ever an enemy of the men of Laighean." In like manner the nameless Bronze-age warrior of Mount Stewart was placed as though leading his men out to battle, it may be against the foe who had sent them to the underworld.

The second monument is the structure called Dún Ruadh, near Greencastle in Co. Tyrone. This is, or rather was, a very remarkable carn, built in the form of a ring, with an open space in the middle (figs. 115, 116). It was surrounded with an earthen mound, now almost entirely effaced. Unfortunately it has been submitted to the process of " hogging," for the sake of a few urns, worth a few shillings ; and therefore it can no longer yield the scientific harvest that might have been gathered from it if it had been examined by a competent excavator. There are traces of thirteen cists to be seen in the dilapidated ruin which now represents the monument. These are not arranged in any particular order.

DUN RUADH

SECTION AB
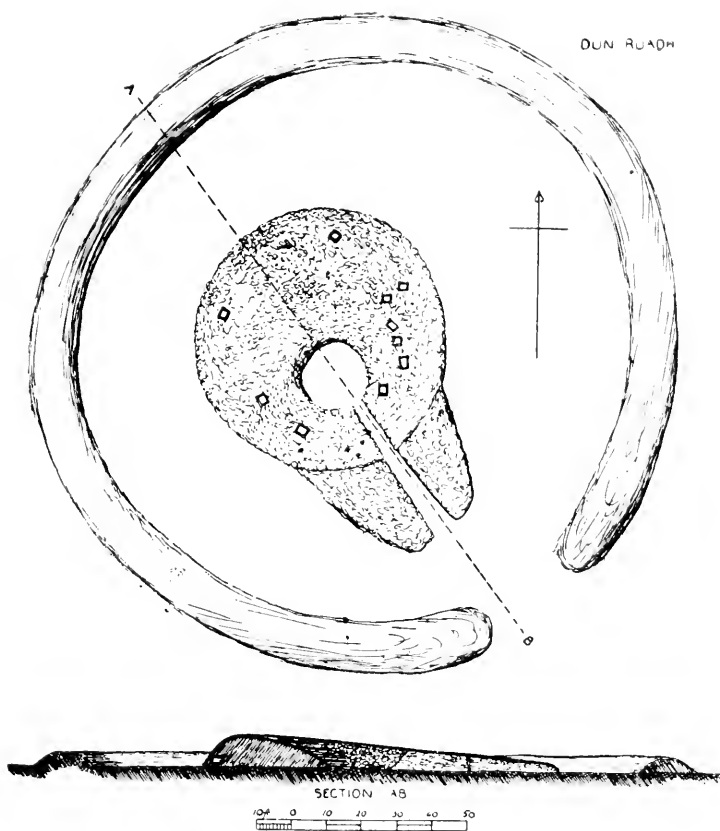
FIG. 115—PLAN OF DUN RUADH

FIG. 116—VIEW OF DUN RUADH

Another remarkable example of multiple burial of this type was that found at Barr Fhionntamhnaigh, near Tri Liag, Co. Tyrone, and excavated in 1871 under Mr. Wakeman's superintendence. This was a carn, 8 ft. high and 40 ft. in diameter, apparently containing no structure at its heart : but round the margin there was a series of eight cists. Mr. Wakeman's paper,[1] describing this structure, is unduly verbose, and demands careful reading before we can discern what was actually found : and even then it is not clear which carns contained which objects. But the following brief analysis seems to contain accurately the gist of the report—

(1) North Eastern Cist. Skeleton.
(2) Human bones ; three vertebrae of a dog ; a cinerary urn, empty, lying on its side on a slab of sandstone.
(3) Two skeletons.
(4, 5) Empty.
(6, 7) Destroyed by treasure-seekers in the absence of the explorer : the debris that they left included fragments of a decorated urn, and a flint knife.
(8) Several bones.

The skeletons were apparently crouched (Mr. Wakeman asserts that the bodies must have been dismembered to fit them into the cists). There is an account of the bones, by another writer, included in Mr. Wakeman's paper, which perversely succeeds in evading almost every detail of importance.

A similar carn, with a central cist of large size and a series of marginal cists at Beithigh, Co. Fermanagh, not far from the carn with radiating limbs described above. The description of this structure[2] states that the cists were apparently eight in number, but the accompanying illustration—a very bad one—shows at least thirteen.

Another multiple interment, from Diseart, Co.

[1] Remarks on the exploration of a pre-historic carn near Trillick, Co. Tyrone, JRSAI, xi, 579.
[2] JRSAI, xvi, 169.

Westmeath, is described (unusually well) by Mr. D. Kelly.[1] This was an earthen tumulus on oval base, in which were two cists. That to the west contained an unburnt skeleton, between 5 ft. 8 ins. and 5 ft. 10 ins. in stature, and dolichocephalic skull : around and about it were calcined bones, including that of a youth of about twelve years. The burnt bones on the cover-slab of this cist were covered with another slab. The eastern cist contained the skeleton of a *brachycephalic* aged man. There was an urn, empty except for infiltrated earth, in the first cist, and some animal teeth : otherwise there were no other deposits.

The essential points of this important interment are—

(1) The burial of persons of different race (query, a foreign servant or attendant with the native chieftain). The younger dolichocephalic (and therefore native) man was probably the more important of the two, and he was accordingly provided with an urn.

(2) Burial inside the cists, burning outside. The burnt bodies may have been those of sacrificed attendants : but this would be a direct contrast to the Loch Riabhach interment described above, where the important person is burnt, the servant buried. We must, however, remember that the Bronze Age was of considerable length, and that a custom practised in one part of the country, or at one period of the Bronze Age, may easily have been the exact reverse of a custom in another part of the country, or at a different period of the Bronze Age.

XIV. [B. 1] : *Cave Burial.*—We now come to speak of cave burials. Natural caves are sometimes used for the purpose, but cases of this are very uncommon. Vallancey reports some cases in the neighbourhood of Teach Lorcain, Co. Dublin :[2] he says : " several urns were found in small natural caves between the rocks of Stillorgan, near Dublin. There were no tumuli over them, but the cave covered with

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[1] D. Kelly, *On the opening of a Tumulus at Dysart, Co. Westmeath*, JRSAI, xiv, 178.

[2] *Collectanea*, vol. vi, p. 304.

a large flag." Nothing more is known of this discovery. The urns, according to Vallancey, were in the Museum of the Royal Dublin Society.

In the cave of Cnoc Ninnidh, near Inis Ceithlinn, was found an urn-burial of two persons, a man and (probably) a woman.

[B. 2] : *Artificial cave burials.*—This is a commoner and more interesting mode of cave-burial. To this class belong the most imposing sepulchres that have come down to us from Ancient Ireland.

The cave may be beneath the surface of the ground, though this (in Pre-Celtic Ireland) is less frequently so than above the surface. One of the best examples is the remarkable burial chamber discovered in 1858 at Baile na hAite, near the Giant's Ring described in
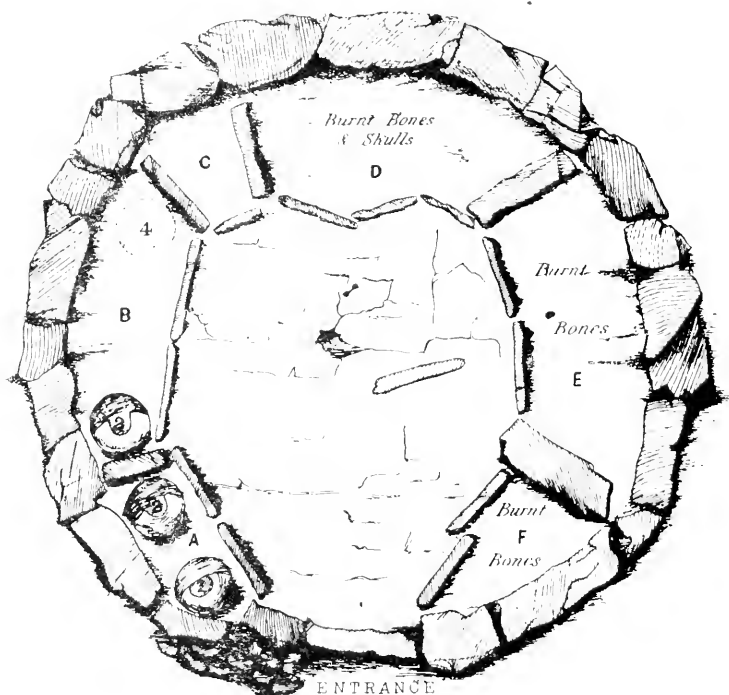
FIG. 117—CHAMBER AT BAILE NA hAITE

an earlier part of this chapter (fig. 117). Happily this monument was found on the lands of an enlightened farmer, who co-operated with the Belfast Natural History and Philosophical Society in carefully exploring it. From the description of this excavation[1] the following particulars are borrowed.

The chamber was in a field almost adjoining the Giant's Ring on the north side. It was constructed underground, circular on plan, and 7 ft. in diameter, with a wall of large irregular stones 2 or 3 feet long surrounding it. These inclined inward considerably, their interstices being closely wedged up with sharp fragments of stone. This wall was about 2 feet high, and the structure was covered with large quarried flagstones resting on the wall and gradually projecting towards its centre, secured where necessary by pinning up with thin stones. The chamber was 3 feet high in the centre, and the top of the uppermost covering slab was 2 feet under the surface of the ground. The floor was paved with flagstones.

In the centre of the chamber was an upright pillar-stone, supposed by the writer in the *Ulster Journal* to have been a prop supporting the roof. It is more probable that it had a religious significance. Similar pillar-stones were found in the inner chambers at New Grange and in the principal burial carn chamber at Ceathramhadh Caol.[2] Most likely it was a rude representation of some deity of the dead, like the famous sculptured drums of chalk found at Folkton in Yorkshire. The writer in the *Ulster Journal* says that this stone was " about 3 feet high," but the scale of his plan would make it only about half that length. Probably the drawing is wrong.

Round the foot of the Ceathramhadh Caol pillar

[1] UJA I, iii, 358. The account is anonymous, but probably written by Robert MacAdam.

[2] For the stone in the New Grange see the plan in Molyneux's *Danish Forts*, here reproduced, fig. 119; for Ceathramhadh Caol see the RIA report already referred to, page 326, and accompanying illustrations.

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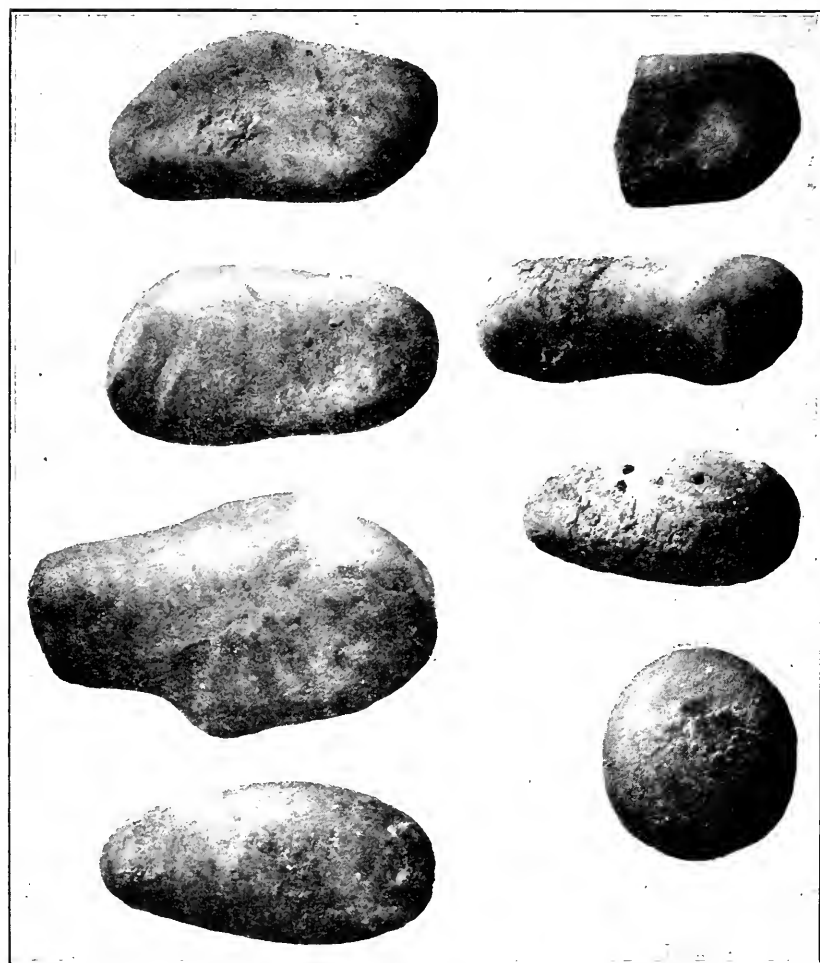
FIG. 118—BAETYLIC STONES, CEATHRAMHADH CAOL

there were deposited a number of rounded water-worn stones, about a foot or so in length (fig. 118). Though they were not worked in any way there can be little doubt that these were sacred stones, probably *baetyls*— *i.e.*, as it were, receptacles of sanctity ; " hand-idols," as they may be loosely called, adapting an Irish term. Precisely similar stones were found inside New Grange when it was first opened in 1699 (fig. 119).

To the east of the chamber at Baile na hAite a space was left open, apparently as an entrance to the chamber : the rest of the circumference was occupied with a series of compartments, marked off from each other and from the central space by slabs on end, about one foot high. There were six of these compartments. The first two (A and B) contained three urns of burnt clay filled with burnt bones ; they were rudely ornamented and much disintegrated, so that fragments only could be preserved. No illustration of these urns or fragments seems to be forthcoming. A fourth urn had stood at the end of B nearest to C, but it had rotted away to a mere shapeless pile of earth. Compartment C was empty. Compartment D contained a few burnt and some unburnt bones, including five skulls : it is noteworthy that they were deposited in sand quite different from the material in which the urns were lying. Part of the pelvis of a small cow, as well as a few fragments of unburnt sheep and goat bones were also found here. Compartments E and F contained " large quantities of burnt bones divided into several parcels by thin stones." There were no implements or ornaments of any kind in the chamber, and no markings on the stones.

In some respects the excavation of this structure, though better than the disgraceful attempt commented upon in a previous page, is not very satisfactory. The construction of the walls and roof of the chamber should have been made clearer by measured sections, which are withheld. There are no illustrations of the pottery. Measurements and particulars of the skulls are given, but the other bones do not seem to have
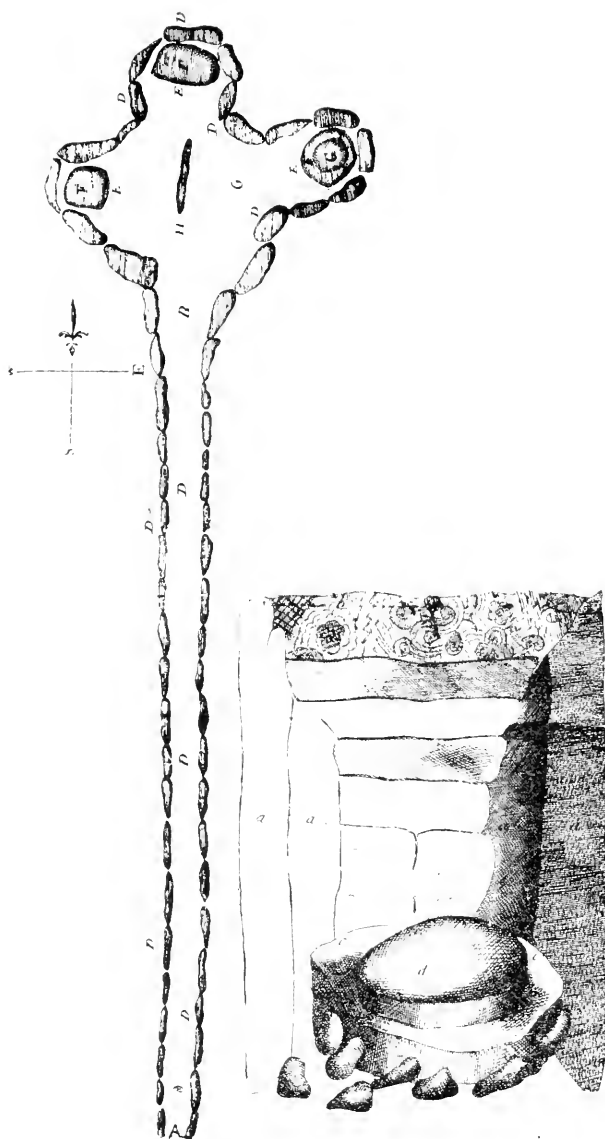
Fig. 119—Molyneux's Plan of New Grange, shewing Standing Stone and Baetyls

been properly examined. It cannot be said too often, as emphatically as possible, that anyone likely to be troubled with false sentimentality (miscalled " reverence ") about the proper scientific examination of human bones should realise at once that archaeology is not for him ; he had far better turn his attention to collecting postage-stamps, a field in which he will do quite as much good, and far less harm. The solution of difficult problems of racial affinity depends entirely upon the collection of as large a body as possible of measurements of living persons and of ancient bones.

Reading the account of the Baile na hAite burial chamber side by side with that of the carns at Ceathramhadh Caol, we are struck with a series of resemblances. We are evidently in the presence of relics of one and the same burial ritual. These resemblances can be set forth thus—

(1) The construction of a burial chamber with a roof formed of oversailing slabs, and with burial compartments constructed at the foot of the wall.
(2) The mixture of burnt and unburnt interments.
(3) The occasional deposition of the burnt ashes in urns.
(4) The disposal of burnt bones, not contained in urns, in parcels upon thin slabs of stone.
(5) The presence of animal bones, probably remains of food-offerings.
(6) A sacred standing stone in the middle of the chamber.
(7) The absence of deposits of intrinsic value. At Ceathramhadh Caol there were a number of bone pins and similar objects mingled with the human bones. Had the bones from Baile na hAite been properly examined, it is more than probable that similar objects would have been detected.

The land surrounding the Giants' Ring seems to have been the site of an important cemetery, doubtless attracted to the place by that great central sanctuary. The farmer told the explorers that on previous occasions he had dug up ancient interments on the same and the adjoining fields. There was no external indication of the interments. It is heartbreaking to read that many cartloads of human bones had been dug up

and lost. On the site of the dwelling-house, which is not far off, there had been a mound which was removed when the house was built : it contained several " short stone coffins " in which were urns and burnt bones. Similar " coffins "—stone cists, to be exact—were found in several parts of the same field, all formed of stone slabs, with a slab at the bottom and another at the top. These in most cases contained urns. Another mound on being opened contained " three very large stones placed on end, sloping to each other at the top," under which were an urn and small bones. Similar remains, including at least one artificial chamber resembling that above described, had been found on an adjoining farm.

The only antiquities found were flint arrow-heads, celts, hammerstones, and " four rings of black light structure like jet, the largest about four inches in diameter and the other three smaller, the whole of them fitting exactly within one another, so that when thus placed they were like a circular grooved disc."

Another find of a burial urn in an artificial structure is described in the same journal,[1] by an evidently inexpert writer, who, to make matters worse, is writing from a memory of thirty years back. The discovery had been made in 1825. The urn was " of a dark coarse clay, rudely ornamented and crumbling into fragments," and contained ashes. It was covered " by a solid stone arch [!] or dome, made of stones about five or six inches in width ; the ' arch,' which was about four or five feet in diameter,[2] was formed so firmly and each stone wedged in so skilfully among the others that it was necessary to use a crowbar to de-molish it." A stone celt and a flint arrow-head were found under the dome. Whatever this structure may have been it certainly was neither an arch nor a dome, and we can only guess that it was in some way comparable with the Baile na hAite chamber above described.

[1] I, iv, p. 270.

[2] From which it follows that the component stones must have been considerably larger than the writer's recollection of them.

Lastly we come to burial in artificial caves over-ground. In such cases the construction is as follows : a dolmen-like chamber was formed, and over it was heaped a mound of stones, of earth, or of earth mixed with stones. The walls of the chamber are either built up of small stones, or formed with rows of long upright monoliths : in some (notably New Grange) there is a mongrel form in which the weight of the roof is supported by walls of small stones, and these are masked by monoliths which add to the decorative and imposing effect of the chamber, and act as retaining stones. The chamber is usually cruciform, side cells for the reception of the burials being formed all round ; the cross is completed by the entrance passage. But the cruciform plan is not the only one. At Ceathramhadh Caol one of the carns contained two chambers, one behind the other, with a narrow doorway between them ; and at Eanach Chloiche Mhuilinn, Co. Armagh, a most important burial structure of this class, described by Vallancey,[1] Betham,[2] and some others of the older writers, but now entirely destroyed, there were three chambers in a row. At Dubhadh the chamber is of irregular plan. Whatever the plan of the chamber, the roof was formed with great slabs of stone, gradually oversailing till they met in the middle. The burials were in com-partments of the kind which we have already seen at Baile na hAite, or else in flat shallow stone sarcophagi, of which examples remain at New Grange and at Dubhadh. This central chamber is technically called the *tholos*.

An entrance passage, called the *dromos*, gives access to the tholos. This is usually straight, though in one of the Ceathramhadh Caol carns it is tortuous. Other carns which have been examined and found to contain similar deposits are those on two Fermanagh moun-tains (Toppid and Béal Mór), We may refer the

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[1] *Collectanea*, vol. v, p. 461.
[2] *Etruria Celtica*, vol. i, p. 173.

reader to the published reports of these excavations.[1]
And it is highly probable that similar chambers exist
in such structures as the great carn of Cnoc na Riaghadh
(fig. 120), popularly associated, under the name
Meascán Mheidhbhe, with the termagant queen of
Connacht.   This stone heap, which is doubtless much
older than the time to which Meadhbh is traditionally
assigned, dominates the greater part of Co. Sligo.
In 1779, according to an unnamed writer quoted by
Col. Wood Martin,[2] it was 650 ft. in circumference at
the base ; the present basal circumference is given at
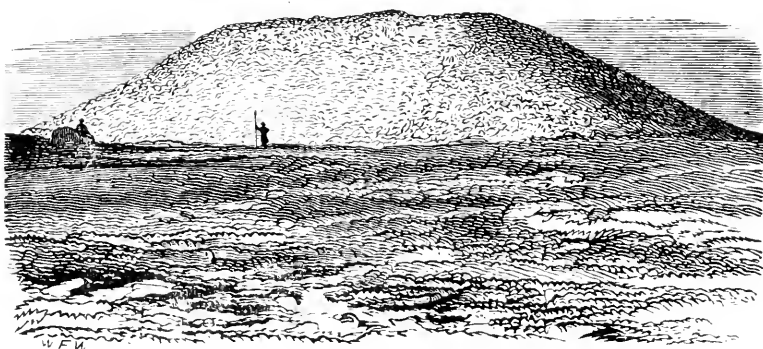
FIG. 120— CNOC NA RIAGHADH

590 feet, and its height 34-25 feet.   I have made a very
rough calculation from the measurements supplied,
merely for the purpose of getting a general idea of
the weight of stones in this monument.   The figure
resulting was rather over forty thousand tons.   There
are several other great carns in the county : one fine
example at Heapstown, also in Co. Sligo, is worth
passing mention.

The cemetery on the hills of Loch Craoibhe, near
Oldcastle, Co. Meath, consists of a series of carns
with burial chambers, resembling those at Ceathramh-
adh Caol, but rather larger and more extensive.

[1] JRSAI, xviii, p. 83.
[2] PRIA, xx, 651, 659.

They have the additional interest that the stones of the principal chambers are decorated with sculptured symbols (fig. 121). The site was first brought to notice by E. A. Conwell, in a paper communicated to the Royal Irish Academy in 1864; and in a later paper[1] will be found a plan and illustrations of some of the carns and the sculptures. Further illustrations have been published elsewhere.[2] But the cemetery still awaits an exhaustive monograph.
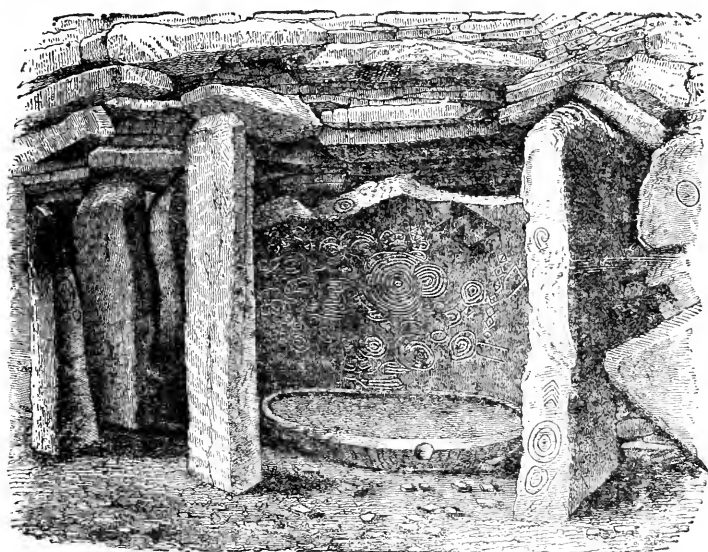
FIG. 121—BURIAL CHAMBER AT LOCH CRAOIBHE

The most important of the series of mounds in this site is that lettered T in Conwell's plan, absurdly identified by him as the tomb of the legendary law-giver, Ollamh Fodhla. It is a conical mound of stones

[1] E. A. Conwell, *On the Identification of the Ancient Cemetery at Loughcrew, Co. Meath, and the discovery of the Tomb of Ollamh Fodhla.* PRIA, xv, 72.

[2] Especially W. Frazer, *Notes on Incised Sculpturings on Stones in the Cairns of Sliabh-na-Calliaghe . . . . with Illustrations from a series of Ground Plans and Water-colour Sketches, by the late G. V. DuNoyer.* Proceedings Soc. Antiq., Scotland, xxvii, p. 294. See also G. Coffey, *New Grange and other Incised Tumuli in Ireland.*

115 ft. 6 ins. in diameter and some 30 ft. high, sur-
rounded with a heap of stones.   One of these stones,
on the north side of the mound, is a large block 10 ft.
broad, 6 ft. high, and 2 ft. thick, worked on its upper
surface to the semblance of a chair : it is known locally
as " the Hag's Chair."   This stone is carved with
engraved symbols of the same character as those in
the chambers.   The interior chamber of this carn is
of the normal form—a short dromos, leading to a
tholos with three burial chambers radiating out from
it, so that the whole is cruciform on plan.

Yet more extensive is the great cemetery of Brugh
na Bóinne, which extends along the left hand of the
river Bóinn, near Droichead Atha.   This collection
of monuments constant tradition associates with the
kings who ruled in Teamhair : and it is highly probable
that the tradition is correct, so far as the Bronze
Age is concerned : for the monuments are probably
exclusively of that period.

The cemetery includes tumuli large and small,
stone circles, standing stones, and ring-forts (probably
sepulchral enclosures) : one of the last named is of
great size.   These are scattered over an area nearly
three miles long and about a mile broad.   Though
the principal monuments have been well described
many times, a complete monograph in this cemetery
is still lacking.

Three mounds in this series have absorbed most of
the interest of archaeologists ; New Grange, Dubh-
adh, and Cnoghbha.   Of these the colossal monu-
ment known as New Grange is by far the most
important, not merely in the Brugh cemetery, but in
the whole of Ireland.

This structure is a mound of earth and stones,
covering an area of about two acres.   It is surrounded
by a kerb of huge slabs, end to end : three are exposed
and are seen to bear ornament ; probably all of them
are decorated.   An opening gives access to the dromos,
which is 44 feet long ; this leads to a tholos with three
side chambers, the overall measurements being 18 ft.
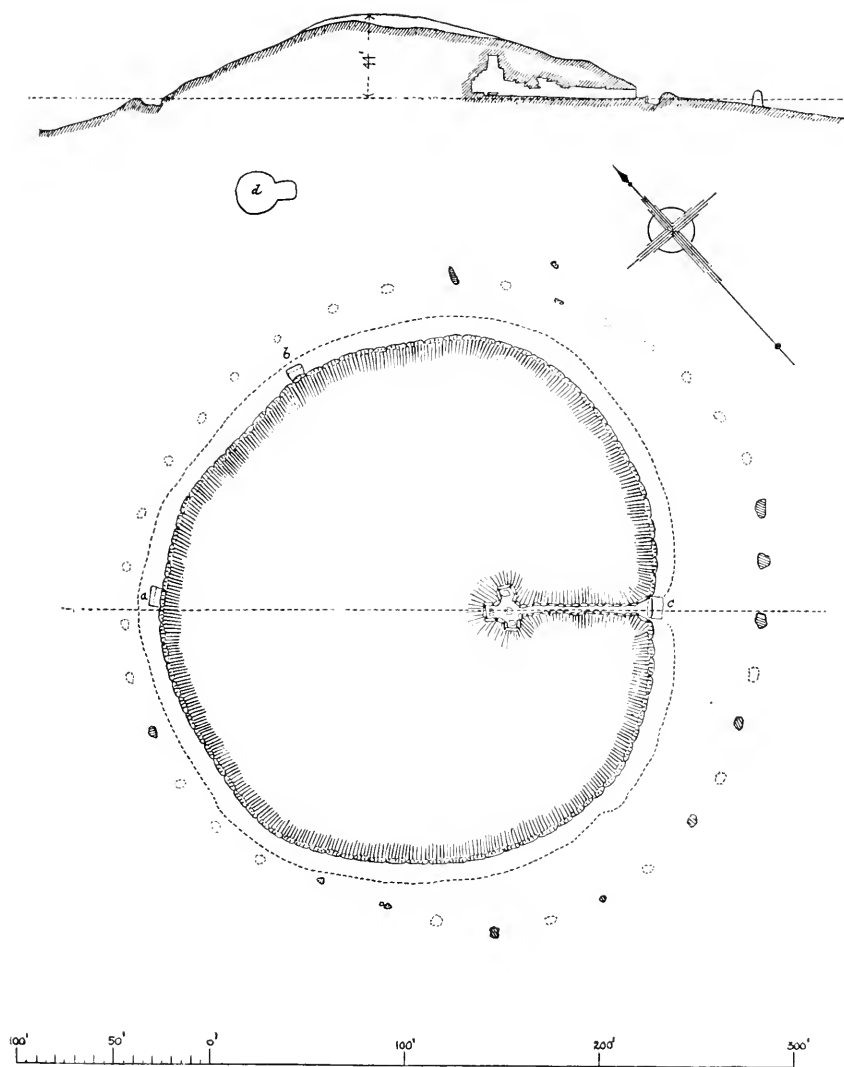
FIG. 122—PLAN AND SECTION OF NEW GRANGE

by 21 ft. : the maximum height of the tholos is 19 ft. 6 ins.   The walls of the dromos, the tholos, and the side chambers are lined with great slabs of stone, elaborately decorated with figures from the " alphabet of symbolic ornament " described in Chap. VII.   Great slabs in the side chambers mark the places where the burial deposits had been made : one of these has in recent years been rather foolishly transported to the middle of the tholos, where it occupies the place of the now vanished standing stone that originally stood there.   Another standing stone once was erected on the top of the mound ; and a ring of standing stones girdles it, fencing in the ground on which it stands.[1]

There is not, north of the Alps, a relic of antiquity more impressive than this mound, which for perhaps nearly four thousand years has handed down from generation to generation the memory of Oenghus of the Brugh.   Even Stonehenge, though to the eye more imposing, is second in interest to New Grange.   For Stonehenge is dead.   The colossal stones stand where the builders left them, and we ask in vain the whence and the wherefore of their existence.   But New Grange is still alive with memories and traditions.   We know why it was erected ; it was the grave-sanctuary of a great bronze-age hero, whose name probably was something like Oenghus, who was deified after his death, and continued to be worshipped in Ireland at least, till the fifth or sixth century of the Christian era.   We know something—not so much as we should wish, but still something—of the builders of the mound.   They have endeavoured to trace in barbaric hieroglyphs a record of their attitude towards the unseen powers which they dreaded ; and though the story is not yet fully unravelled, a good beginning has been made.

[1] For numerous illustrations of New Grange, outside and inside, and of the sculpture with which it is decorated, see G. Coffey, *New Grange (Brugh na Boinne) and other Incised Tumuli in Ireland*. Dublin, 1912.

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